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## Clinical Report.

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Case 1. Man, age 30, soldier. Says he has had a pain in his left leg running from his toes up into the groin. Says also he has several lumps in the groin which antedate the pain and he believes causes it. On removing his trousers we find a red line running from several indurated glands in the groin to an ulcer situated between the second and third toes. There is an offensive secretion arising from this ulcer.

His penis is swollen and shows signs of recent inflammation and he acknowledges having had a hard chancre which has caused this infiltration but he says all active inflammation ceased six months ago. The ulcer between the toes appears to be a condyloma though this is not a frequent situation for it. We have then a phlebitis caused by poison absorbed at the site of a condyloma between the toes. I do not attribute the phlebitis to the condylomatous ulcer but as the man is exceedingly dirty and wears no stockings, I think the irritation of the bare shoes or filth has caused the inflammation.

I shall have him wash his feet and apply some benzoated oxide of zinc ointment between the toes and give him internally a half ounce of Epsom's salt to be followed after eating by 20 drops tinct. ferri chlor. for several days. The course of the vein we will paint with tinct. iodine twice daily. Specific treatment we will defer until after this local disease has yielded to our treatment.

Case. 2.—One glance at this man tells you his disease. It is leprosy. He is but 30 years of age and yet looks fifty. He says he has had the disease about seven years and that the first he noticed of it was a numbness, followed by entire loss of sensation in a few months, in the left foot. His father is living and 63 years old and healthy. Mother also alive and well, age 56. Only has one sister and she is healthy. In a village a mile away are two brothers who are lepers, but he has had no communication with them. He has lost his eyebrows and most of his hair which with the copper-colored hypertrophic ridges in the forehead and cheeks disfigure him greatly and make him look much older than he is. What is of more moment to him, however, than disfiguration is the loss of several joints from the fingers of both hands and the contraction of the flexor tendons so that he with difficulty extends his stumps of fingers to grasp anything. You notice he can scarcely place his phial on the counter. His toes have also lost some joints but the tendons have not contracted. Sensation abolished to the knee, deficient from there to the abdomen but good over abdomen and chest. Deficient but not abolished on face, deficient also in both arms, particularly bad in left. He has no open ulcers at present so we will only treat the general condition. We will repeat what he has been taking and what he says makes him feel better, though as he has no pain whatever I think is imagination, namely, twenty drop doses of syr. ferri iod., three times daily. This man owns to having had syphilis at 23 or just about the time of the first development of numbness. Now, although I don't believe all lepers syphilitic, I do believe that syphilis prepares the body for the reception of the leprous germ and other things being equal I believe a non-syphilitic person able to re-

sist contagion much better than a subject of syphilis.

CASE 3.—This little girl is eight years old and her mother says she is constantly crying with pain in the stomach. There is no set time for the pain to come on but eating food relieves it usually for some time. Appetite is capricious and nausea frequent. She vomited up a long round worm last night which the mother declares was a foot long. Her tongue is a typical worm tongue being coated with a thin white fur through which especially at the sides the red papillæ arrange themselves in rows more or less even. We shall give her three grains each of santonine and calomel rubbed up with ten grains of sugar of milk and divided into three powders. One powder to be taken each night and morning on an empty stomach and after the three have been taken, followed with a dessertspoonful of castor oil. We can safely expect this to effectually remove all symptoms.

CASE 4.—This man, age forty, says he is always filled up with wind. Worse immediately after eating but even when hungry he feels full.

On palpation we find no evidence of retained fæces but evidently he has considerable wind in the bowels. His diet is largely cabbage and bread with raw onions or radishes. He suffers considerable pain at times but has never vomited. Is not at all sensitive on pressure. Is chronically constipated. A change of diet would be a good thing but that to any marked degree is impossible owing to his poverty. We will tell him however to have his cabbage well cooked and to eat his bread when a day old. There is evident lack of biliary secretion and perhaps inactivity of all the glands concerned in the process of digestion. I shall give him the following pill to be taken just before meals:

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Pulv. podophyllin.....gr. j.
Acid carbolic.....gr. viij.
Gum assafœtida.....gr. xlviii.
Ext. taraxicum.....q. s. ft. pill xvi.

This combination I usually find successful in this class of cases but occasionally arsenic in Fowler's solution gtt ij before meals will be better.

CASE 5.—This boy, eighteen years old, comes back to us after an absence of two years. Two years ago he was in the hospital with pleurisy of the left side, and after the effusion subsided he was left with an atelectasis of the left lung so that his right lung alone aerated the blood. I kept him under observation at that time for over two months and although he had no fever after the effusion subsided yet his pulse continued uniformly at 120 beats per minute. Then I sent him to his home in the country forbidding his attending school for a year. I have not seen him since. Now to-day what do we find to be his condition. He has grown some taller and much stouter than he was when I last saw him and his chest is not retracted to the degree it was then, though he has a decided stooping of the left shoulder.

On auscultation I find great improvement the upper two thirds of this formerly useless lung is now receiving and expelling air with each inspiration. The lower third is still flat on percussion, there is no vesicular murmur to be heard over it, and it is apparently glued up so tight that it will not expand any more. Nature has by pure air and exercise on a farm, given this boy a fairly useful lung, whereas if he had remained in the city and at school he would probably have gone into consumption. He now comes back to school, for which I am sorry. Boys in his condition who have the elementary education he has should remain in the country and by judicious reading acquire all the education necessary to an outdoor life. If cooped up with many others bad air will have its effect on him and his health will break down under it. As he has merely come to be examined we will report him as much better and advise his return to the country instead of going to school as he desires.

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## EXALGINE.

From a study of the analgesic properties of exalgine made by Dr. Dèsirè, at the Hôpital Lariboisière, the conclusion was drawn that, aside from any antithermic action, the product is an admirable specific against pain. It was employed in a great variety of apyretical affections with uniform success. The dose of twenty-five centigrammes, or about four grains, was found sufficient for most cases, but it can be pushed to double or treble this quantity, though as much as a grain is scarcely ever necessary. If medicine rarely cures, it should at least always console, and sometimes relieve, and with exalgine the author thinks great relief can often be given.

# Communications.

## QUALITATIVE TESTS FOR SUGAR IN THE URINE.*

By J. D. RIKER, B. S., M. D.,
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It is known by those who have had considerble experience in testing the urine for sugar, that nearly every test is more or less unreliable. In view of this fact we have made a careful study of all the more important sugar tests, applying them to a large number of specimens of normal and abnormal urine and to standard sugar solutions, as well as to the isolated organic constituents of urine in health and disease in order to find if possible the substances that interfere with the more common tests and the means by which they may be avoided so that the presence or absence of sugar may be known beyond the question of a doubt. (For formulæ of the tests referred to in this paper, see the end of this article, also the formulæ for certain tests that have appeared from time to time in journals as reliable but which are in no way superior or even equal to some of the common tests herein reviewed.)

### THE COPPER REDUCTION TESTS.

The copper sulphate solutions in general use are (1) Trommer's, (2) Fehling's, and (3) Pavy's. While we have many modifications of these, only the most important will be touched upon.

1. TROMMER'S TEST. To two or three c. c. of urine in a test tube, add one or two c. c. of caustic soda or potash, then drop by drop a solution of cupric sulphate 1:10, until the precipitate formed appears to have dissolved completely; heat the upper portion of the mixture and if the urine contains sugar a yellowish red precipitate is formed in the heated layer (before reaching the boiling point.)

2. FEHLING'S TEST. Pour Fehling's solution, to a depth of three fourths of an inch, in test tube; boil and add a few drops of the urine. In a few seconds the mixture will become suddenly yellow if the urine be diabetic.

3. SCHMIEDEBERG'S SOLUTION is applied the same as Fehling's.

4. PAVY'S AMMONIATED COPPER solution works nicely in making quantitative estimations of glucose in water solutions, but cannot be applied to urine with any satisfactory results, as shown by testing a large number of normal urines, every one of which gave reactions for sugar, the amount of urine used in each test not exceeding the amount of the test solution.

The precautions to be observed in the use of the copper reduction tests are as follows: In the application of Trommer's test to the urine, notice first that the disappearance of the blue color of the copper sulphate solution is no proof of the presence of sugar. The blue color is caused to disappear by the action of the alkali upon the organic matter present; not only must the blue color disappear but there must be a distinct precipitate of the sub-oxide of copper (4). Now this precipitate is to be recognized by its color, as on the addition of caustic soda or potash the phosphates will be thrown down as a dirty white precipitate, which is to be distingnished from the red or yellow sub-oxide of copper thrown down by sugar (4). Again, continued boiling will in fifty per cent. of normal urines reduce the copper sulphate. Sometimes the reaction fails unless the urine be diluted before testing. (Kulz). The power of a urine to dissolve the cupric oxide does not necessarily imply the presence of sugar, as ammoniacal or albuminous urines may do the same. (V. Jaksch.) In the application of Fehling's test and its modifications observe the following rules:

1. Boil your Fehling's solution to see that heat alone will not cause a reduction.
2. Never add more urine than you use of the reagent.
3. The Fehling should never be added to the boiling urine; but to the boiling Fehling add your urine drop by drop, five or six drops being sufficient in the majority of diabetic urines to completely reduce the copper.
4. Never boil longer than thirty seconds after adding the urine.
5. If there be albumin present in the urine it must be removed. If the urine be acid and contain but little albumin, the albumin is removed by heat and filtration. If the urine be not acid it should be rendered so by the addition of acetic acid, avoiding an excess, then heated and filtered. The filtrate should then be rendered alkaline

*Note.—Credit is due W. H. Snyder for valuable assistance in the experimental work of this paper.

before dropping into the Fehling's solution.

6. Remember that any strongly acid or even alkaline (from ammonia) urine, should be neutralized before applying the Fehling's Test, as diabetic urine quickly undergoes fermentive decomposition with the formation of lactic acid which will dissolve the sub-oxide of copper as soon as formed; again, urine undergoing alkaline fermentation holds a certain amount of the volatile alkalies in solution, which should be neutralized or boiled off, as they in turn would dissolve any small amount of reduced copper. If there be a large quantity of albumin present in the urine, it can best be removed by saturating with sodium sulphate crystals, boiling and filtering.

Substances in urine other than sugar, that reduce the coppor solution when heated, are uric acid, urates, xanthin, hypoxanthin, kreatinine, (5*) indican, pyrocatechin, (6) alcapton, (Boedecker) nephrozymose (7) (Béchamp) urohodinic and uroleucic acids, (Kirk) (8) glycosuric acid (Marshall) (9 and 10). The organic substances isolated from the urine by Boedecker and Kirk are said to reduce the copper solutions but not sub-nitrate of bismuth (6).

The therapeutic agents that reduce the copper solutions are, turpentine, chloroform, chloral, (which appears in the urine as urochloralic acid) (3), ether, carbonmonoxide, amyl nitrite, camphor, benzoates, curara, cubebs, morphine, salicylic acid, hydrochinon, phenol, benzol, tannic acid, salol.

Delicacy of the Fehling solution in the cold: 1. In testing the delicacy of Fehling's solution we placed five test tubes aside in a cold place for twenty-four hours containing equal parts of the Fehling and a (1), (½), (¼), (⅛) and ($\frac{1}{10}$ per cent.) of grape sugar. In all we obtained decided reductions.

2. At the same time we placed tubes away containing (1) Fehling and uric acid (2) Urates (from abnormal urine. (3) Xanthin. (4) Hypoxanthin. (5) Kreatinin. (6) Albumin. (7) Mucus. (8) Pus and mucus. (9) Solution of peptones; not obtaining the least sign of a reduction in any of the nine.

From our experiments with the copper solution, we consider a sure way to detect the presence or absence of an abnormal amount of sugar in a given sample, is to set away equal parts of Fehling and urine in the cold for 24 hours; when if sugar be present to the amount of 0.1 of 1 per cent. you will have a reduction of the red or yellow sub-oxide of copper: That you may have a large amount of uric acid, urates, pus, albumin, etc., that would on heating reduce the copper, but in the cold have no effect.

Bottger's Bismuth Test. (11) To a solution of grape sugar or diabetic urine add an equal volume of a concentrated solution of sodium carbonate, then add a small piece of the basic nitrate of bismuth and boil the mixture. The bismuth is reduced to a sub-oxide, the reduction being indicated by the change in color of the bismuth to gray and if sufficient sugar be present, to a black. As this is given as a reliable test in nearly every work on the subject and as it is so universally employed by physicians, it might be well to give in full the results of our experiments; using Nylander's modification of Bottger's test (12) we applied it to the urine, etc., in the following manner:

1 In a test tube containing three-fourths to one-half volume of urine, again heating to the boiling point. Of thirty-three samples of normal urine so treated, every one gave a marked reduction.

2 After fermenting normal urine with yeast we still obtained a reduction.

3 We placed seven samples of urine of high specific gravity, away in the cold with an equal amount of Nylander's solution and examined after 24 hours and no reduction had taken place.

We next placed equal parts of a 5,2 and 1 per cent. solutions of grape sugar and Nylander's solution away in the cold 24 hours with negative results. We found:

1 Heat must be used to bring about the reduction.

2 Every sample of normal urine tried in this way gave more or less of a reduction.

We desired then to find, if possible, the substance or substances in normal urine which gave the reduction.

Thinking that it might be some of the sulphur compounds, we boiled the bismuth solution with potassium sulpho-cyanide, taurin, etc., with negative results. Next the precipitate of bismuth reduced by heating with twelve samples of normal urine was washed thoroughly and tested for sulphur but found none. The question of

*See references to papers.

the sulphur compounds as giving the reduction being dismissed, we tested with glycogen, acetone, succinic acid, pepsin, etc., with negative results. Finally on applying dilute solutions of both albumin and peptones we obtained heavy reductions a .01 per cent. solution of peptones giving strong reduction, proving to our satisfaction that this reducing substance in normal urine was probably some intermediate protein compound as nephrozymase (6), described by Bechamp as always present in normal urine and which Leube regards as a mixture of an albuminous and of a saccharine body.

MOORE'S (13) or HELLER'S (14) TEST. To urine add an equal volume of caustic potash or soda, specific gravity 1.014, and boil the upper stratum of the fluid; if much sugar be present a dark brown color will be produced in the heated portion of the fluid. To find the value and delicacy of this test a 1 per cent. solution of glucose was treated in this way and compared with thirty-three samples of normal urine, eleven of these samples produced even darker brown color than the 1 per cent. solution of glucose. In diabetic urine the color is probably due to the formation of glucic and melassic acids (6).

MULDER'S or INDIGO CARMINE TEST. (4) Render a solution of indigo carmine (1: 1000) alkaline with sodium carbonate, boil this with one half its volume of diabetic urine, when the color changes from blue to purple, purple-red, yellow, and finally to straw-yellow color, after cooling and exposure to the air the various colors are obtained in the reverse order, until the mixture becomes blue again.

1. We found that strong sugar solutions, (5 to 10 per cent.) had no effect upon the color in the cold.

2. Heat should be cautiously applied, for boiling equal volumes of the indigo carmine solution and normal urine for any length of time dispersed the blue color in every one of the thirty-three samples tried.

3. We found that by using certain precautions, this test can be used to detect the presence of sugar in urine containing 2 per cent. or over, in urine containing less than that it is absolutely worthless, as was shown by the following experiment: Pour indigo carmine solution to the depth of one inch in three test tubes, render strongly alkaline with sodium carbonate, boil and add not more than an equal amount of a 5, 3 and 2 per cent. solution of grape sugar in the several tubes and allowed to stand until cool. In the 5 and 3 per cent. tubes the color is completely obliterated, in the 2 per cent. tube the color is changed to purple-red; now in all normal urines tested we found that if you heated both before and after adding urine the color was completely destroyed by the organic matter present normally in urine; hence in applying this test never heat after adding the urine and if the solution to be tested contains 2 per cent. of sugar, the blue color will be changed to purple or completely destroyed.

Urates, uric acid, kreatinin and inosite gave negative results.

Lactose acts the same as glucose, (15).

FERMENTATION TEST. Fill a test tube to over flowing with a feebly acid diabetic urine, add a small piece of German yeast, close the tube with a tightly fitting cork or rubber stopper which has a small glass tube passing through it with one end extending down into the solution and the other bent at right angles; vinous fermentation will take place and the carbonic acid gas will rise to the top of the tube and by its pressure, will force some of the solution out through the small tube. The test tube should be left in a warm place for several hours when the stopper may be removed and the carbonic acid tested with a lighted match. This is one of the most reliable tests for sugar in urine containing more than 0.1 per cent. (16) but a control or comparison tube containing some of the same yeast and distilled water should be prepared and placed by the side of the tube and urine, as some specimens of yeast give off from themselves small quantities of carbonic acid gas; hence the preparation of the control tube should never be neglected. Grape-sugar is said to be the only carbo-hydrate found in urine that is broken up by the action of yeast as milk sugar, muscle sugar, etc. do not take a part in the fermentation, (6).

ALPHA NAPHTHOL AND THYMOL, (*Molisch*, 17-22.) To .2 c. c. of urine add two drops of a fifteen to twenty per cent. alcoholic solution of alpha naphthol and thymol, after mixing add an equal amount of strong sulphuric acid, a deep violet-red color with naphthol and a deep red with thymol will result if any carbohydrates or glucosides capable of yielding sugar (23-24) with sulphuric acid be

present. On diluting with water a violet blue precipitate is thrown down, soluble in alcohol and ether with a yellow color and in caustic potash with a golden yellow color; Molisch claims he can detect 0.00001 per cent. of sugar with his test, (3).

On applying this test to thirty-three samples of normal urines we obtain the reactions as stated above. This was sufficient evidence for some investigators to claim the presence of a small per cent of sugar in all normal urine. Before we accepted this statement however we wanted to prove by experiment that no substance other than sugar found in normal urine would give these color reactions. We submit in short the results of our work: uric acid, urates, xanthin, alloxin, allantoin, kreatinin, hippuric acid, potassium sulphocyanide, succinic acid, sodium and potassium phosphate, sodium chloride and sulphate gave no reaction; urea gave a slight red color with thymol but not with alpha naphthol; phenol gave the color reaction with both; peptones, a strong purple color with naphthol, none with thymol; inosite and lactose, none with naphthol; splendid reaction with thymol; acetone with thymol, none with naphthol; pepsin with thymol, not with naphthol; albumin in dilute solutions with thymol, slight with naphthol; finally normal urine after fermentation gave good tests with both. From the above tests we can see the reaction in normal urine need not of necessity indicate the presence or absence of sugar or carbo-hydrates, as any of the proteid substances as well as any of the phenol group will do the same. However if sugar be present in urine such urine can be diluted to such an extent that normal urine would give little or no reaction. Fifty per cent. of normal urines will give but a very slight trace of reaction after adding 100 volumes of water; others bear 150-200 dilutions, while some gave no reaction after the 50 dilution. Diabetic urine gave the reaction after being diluted from 300-400 times its volume.

Safranine Test, (25). Boil 1 c. c. of urine with 5 c. c. of a 1:1000 solution of safranine and 2 c. c. of caustic potash. Decolorization denotes diabetic urine; on cooling, the solution becomes turbid, unlike Fehling it is not affected by uric acid, kreatinin, chloral, chloroform, peroxide of hydrogen, or the salts of hydroxylamine. In using the test as given above, we found that every one of the thirty-three samples of normal urine would destroy the color if the boiling was continued any length of time. Three samples of normal urine after fermentation also gave reaction for sugar by this test. On trying several of the aniline dyes it was found that methylene-blue gave the same reaction.

Picric Acid Test, (26). Add to the urine an equal volume of a saturated aqueous solution of picric acid, and after the subsequent addition of a little potash, heat gently, when a marked reddish brown coloration will show itself. This change of color is due to the formation of picramic acid. By means of this color test Dr. G. Johnson makes a quantitative estimation of the sugar in diabetic urine. (26). In applying this test to thirty-three samples of normal urine, seven out of the number gave about the same color that was obtained from a 1 per cent. solution of grape sugar. We found furthermore that unless comparison tubes containing known strength of grape solutions were used, this test cannot be used in the urine. Every sample of normal urine will give a marked reddish brown coloration as is described above. Picric acid solutions are reduced by kreatinin, kreatin, inosite, and urine of patients taking choloral or sodium salicylate, (28).

Phenyl-Hydrazin Test, (*Emil Fischer* 29-32). Ultzmann's method modified by Bond, (Appendix B. Hoffmann and Ultzmann's Analysis of the Urine; Translated by T. B. Brune and H. H. Curtis, 1889).

"Into a test tube five inches long pour phenyl-hydrazin salt to the height of about 0.4 of an inch; add powdered crystals of sodium acetate to the same height above, and urine to one-half the height of the tube. This gives approximately by weight, one part phenyl salt, two parts sodium acetate, and fifteen parts urine; shake the tube gently until the sodium acetate is dissolved and then boil carefully for half minute; set the tube aside and examine for crystals. It is claimed for this test that it does not react with normal urine, that it detects sugar in as small quantity as does Fehling's test, and that it reacts with all substances of the sugar class which reduce alkaline copper solutions; thus it reacts with glucose, levulose, lactose, cane sugar, maltose, and sorbin,

but not with inosite or trehalose. The reagent does not spoil by keeping and its mixture with urine being antiseptic, allows the crystals formed to be detected weeks after their precipitation."

In taking the proportions used above I found that considerable caution was necessary to obtain good crystals. Instead of using two to three volumes of the urine to one of the salts, I found that to be sure of obtaining the phenyl-glucosazon crystals, even when large quantities of sugar were present, you must be careful and add but little more of the solution to be tested than to cover the dry salts, for like many crystalline bodies, they will not form in an excess of water, even when the crystals are practically insoluble in water. Our application is as follows: Place in a test tube equal volumes of phenyl-hydrazin salt and sodium acetate crystals, and add just a sufficient amount of the solution to be tested to nicely cover the phenyl-hydrazin and sodium acetate salts; heat gently to the boiling point and while heating agitate the mixture so that the phenyl-hydrazin is brought into intimate contact with the solution, otherwise it would rise to the surface and sides of the tube, and on continued heating would decompose. If over two per cent. of sugar is present in the solution, after heating half a minute and placing tube to one side for fifteen minutes, when, if the test is carefully made, you will have almost a perfect mass of lemon yellow crystals, forming in bundles or sheaves. These crystals can be studied under the microscope; a one-half per cent. sugar solution, after standing one hour, began to form fine spider-webbed-like crystals; on the addition of a few drops of acetic acid, the crystallization was hastened. A one and one-fourth sugar solution stood twenty-four hours before good crystals were obtained, showing from this that the time required for the appearance of the crystals depended directly upon the amount of sugar present. The crystals will melt at 204° C. They are only slightly soluble in water. The crystals in the mother liquor were found insoluble in $HC_2H_3O_2HCl$, $HNO_3$, $H_2SO_4$, $NH_4OH$; with NaOH and on standing exposed to the air, the crystals were gradually decomposed, the solution taking on a deep cherry-red color. KOH manifested the same action only the color of the solution was a light orange-red. In finishing I would say: 1. Use concentrated solutions. 2. If crystals do not form within a half hour, at the ordinary temperature, cool the test tube to the freezing point, add one or two minims of acetic acid, and allow to stand fifteen minutes longer, when if no crystals form, we may be safe in concluding that we have less than one-half per cent. sugar present. Every sample of normal urine tested gave negative results.

DIAZOBENZOL SULPHURIC ACID TEST, (3). To twenty c. c. of urine in a test tube made strongly alkaline with caustic potash, add an equal volume of the diazo-benzol sulphuric acid solution, (1 : 50) made faintly alkaline with caustic potash.

If sugar be present, the urine is at first yellowish-red, gradually becoming darker, finally dark red, and if there be much sugar present, opaque, (34); when strongly shaken the froth is carmine-red. Acetone and diacetic acid have a similar reaction, (39). Caution should be used in applying this test as the reagent is highly explosive, (35). This test is not satisfactory and many others are more reliable.

RUBER'S TEST, (36). The urine is treated with an excess of lead acetate solution, filtered and to filtrate ammonia is added until a permanent precipitate forms. The fluid is heated but not boiled. If sugar be present, the precipitate formed on the addition of ammonia, gradually assumes a rose-red color which vanishes slowly on standing; more quickly on application of heat, (60°–70° C.) giving place to a yellowish coffee color. Milk sugar does not give this reaction unless boiled for some minutes. Upon repeated trials this test was not at all times satisfactory: a number of normal urines gave a slight reaction for sugar.

THE POLARISCOPE TEST. A urine containing more than three per cent. sugar will give a marked polarization to the right, if no albumin be present; but as it requires some practice, and the expense of the apparatus will prevent its use becoming general, we make no mention; however, a saccharimeter introduced by Dr. Ultzmann and of comparatively small cost, is being recommended by many analysts. For particulars, see (28), (27), (6).

In bringing the review of the qualitative tests for sugar to a close, I may say: My

experiments have extended over a period of two years during which time nearly every test applied to urine has been carefully studied and the tests which present themselves to us as the most reliable and which are in vogue in our Chemical Laboratory are, namely: Fehling's (in the cold), Phenyl-hydrazin, Fermentation and Polariscope tests; furthermore, that the other tests on repeated trials do not yield results that in all cases are free from doubt.

FORMULÆ FOR STANDARD AND VARIOUS TESTS.

FEHLING'S SOLUTION, (4). Weigh out 34.65 grams of pure crystallized copper sulphate, pulverize and dissolve in 200 c. c. of distilled water until the solution has a sp. gr. of 1.14; then dissolve in this solution, 173 grams of crystallized rochelle salts, (potass. et sodii tartrate.) Gradually mix the two solutions and dilute to one litre, (1000 c. c.) Mixture is of a deep blue color and 10 c. c. of it will just be decolorized by .05 gram of grape sugar. This solution will decompose easily and should be tested by heat and if no precipitate is thrown down the solution is still good. Other authorities (6) advise the two solutions being kept in separate glass stoppered bottles and mixed as needed, otherwise if kept any length of time the tartaric acid changes into racemic acid which reduces the cupric salts.

SCHMIEDEBERG'S MODIFICATION OF FEHLING'S SOLUTION, (3). 34.634 grams of copper sulphate dissolved in 200 c. c. of distilled water, with 15 grams of pure mannite dissolved in 100 c. c. of water and 400 c. c. of a caustic soda solution, specify gravity, 1.145, and dilute with water to one litre.

PAVY'S AMMONIATED COPPER SOLUTION, MODIFICATION OF FEHLING'S, (3). Dissolve 4.158 grains of copper sulphate in water with the aid of slight heat. Take another bottle and dissolve 20.4 grams of rochelle salts and a like amount of caustic potash together; mix the two, cool and add 300 c. c. of strong liquor of ammonia, specific gravity 0.880 and dilute to one litre.

HAINE'S MODIFICATION OF FEHLING'S, (37). Take 3 grams of copper sulphate; 9 grams of caustic potash; 100 of glycerine and 600 c. c. of water.

BARFOED, (37). Mix 200 c. c. of neutral solution of copper acetate (1.15) with 5 c. c. of 38 per cent. strength acetic acid. Add a few drops of this solution to urine, boil and if sugar is present, a red precipitate is thrown down.

BARRESWIL, (37). Take 60 grams of potassium hydrate and 40 grams of neutral tartrate of potassium, dissolve in 200 c. c. of water and mix with a solution of 65 copper sulphate in 500 c. c. of water.

CAMPANI, (37). To a solution of concentrated sub-acetate of lead, add dilute solution of copper acetate; add to the urine and if sugar be present a yellow to orange-red precipitate occurs.

CAPPAZUOLI, (37). A solution of hydrated oxide of copper in potassium hydrate; blue color if sugar be present.

NYLANDER'S MODIFICATION OF BOETTCHER'S TEST, (12). Two grams of sub-nitrate of bismuth; 4 grams of potass. et sodii tartrate; 100 grams of caustic soda of 8 per cent.

BREWCKE, (37). Boil fresh sub-nitrate of bismuth wlth 30 grams of potassium iodide and 150 c. c. of water after five minutes add 5 c. c. of 25 per cent. solution hydrochloric acid.

DUDLEY, (37). The sub-nitrate of bismuth dissolve in nitric acid; add equal amount of acetic acid and dilute to 10 volumes with water; 1 or 2 drops of this to urine made alkaline with NaOH and boil. A gray or black precipitate shows the presence of sugar.

FRANQUI AND VAN DE VYRE, (37). Boil the urine with hydrated bismuth in potassium hydrate and a reduction occurs if sugar be present.

PICRIC ACID AND POTASH, (27). Use one drachm of urine and one-half drachm of liquor potassium; 10 minims of picric acid solution; dilute to two drachms with water and boil: If sugar be present the yellow picric acid is changed to the deep-red picramic acid.

CAILLIAN, (37). Shake two volumes of chloroform with four volumes of urine; shake and the sugar will be in the upper layer of chloroform.

CASAMAJOR, (37). Shake urine with methylic alcohol and if sugar be present a slight cloudiness ensues.

KNAPP'S (37). To 10 grams of mercury in water, add 100 c. c. of caustic soda (1.145) and dilute to one litre.

LINDO, (37). A solution in caustic soda or potassium of the yellow substance ob-

tained by the action of nitric acid on brucine; yellow and then intensely blue.

MAUMENES, (37). Soak strips of white woolen in a 33⅓ solution of the per-chloride of tin ($SnCl_4$), dry; when boiled with a glucose solution it turns brownish black.

MAZZARA, (37). Heat urine with chloride of nickel, and if there is sugar present it gives a green precipitate.

HAGER, (37). To 30 grams of red oxide of mercury, add 30 grams of sodium acetate, add 25 grams glacial acetic acid and 50 grams of NaCl and 400 c.c. of water; dissolve and dilute to one litre; add an excess to the urine and if sugar be present there will be a separation of mercurous chloride. ($Hg_2Cl_2$).

POLLAECI, (37). Shake the urine with 4 c.c. of water, add one drop of watery solution of ferric chloride; add 6 drops of sodium hydrate solution, then boil and add 3 drops of sulphuric acid; cool and add a fresh solution of red potassium ferrocyanide. Blue color.

PRATESI, (after Horsley) (6). Dissolve 2.5 grams of caustic potash in 60 grams of concentrated liquid potassium silicate and add 2 grams of potassium bichromate. On a strip of tin allow 5 drops to dry, when testing heat the tin and the drops turn yellow color; add urine, and sugar if present produces a green color.

HUIZINGA, (38 and 39). Urine made alkaline with potassium hydrate, add a few drops of molybdate or tungstate of ammonium; heated to the boiling and then acidulated, carefully with HCl, when a blue color is developed if sugar be present.

TEST FOR CARBO-HYDRATES, (39). Make the urine alkaline with KOH, then treat with benzoyl chloride; all the carbohydrates in the urine will be precipitated.

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## CHLOROFORM INTERNALLY.

Dr. Steep (*Le Progrès médical*, No. 21, 1882) has employed chloroform internally in a large number of diseases. He has obtained no appreciable effects in diphtheria, whooping-cough, pulmonary tuberculosis, or acute gastric catarrh. If given in infantile diarrhœa, with a small dose of opium, it will arrest the disease. In old persons he employs the following formula:

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| | |
|---|---|
| Vehicle | 30-40 grams. |
| Chloroform | 3-4 gtts. |
| Tr. opium | 5-10 dgrams. |
| Subnitrate of bismuth | q. s. |

## FISTULA IN ANO—GENERAL CONSIDERATIONS—ETIOLOGY—SYMPTOMATOLOGY—DIAGNOSIS—PROGNOSIS.

By LEWIS H. ADLER, JR., M. D.,

INSTRUCTOR IN DISEASES OF THE RECTUM, PHILADELPHIA POLYCLINIC AND POST-GRADUATE SCHOOL.

A fistula which is not due to ulceration and perforation of the rectal wall from within is the result of a previous abscess. Such an abscess forms in the ischio-rectal fossa and although opened early by a free incision, even before the cavity becomes distended with pus, it frequently fails to heal. It may fill up and contract to a certain extent, but it does not become entirely obliterated; a narrow track remains, which constitutes the affection designated fistula in ano. Several reasons may be mentioned here as to why rectal abscesses should so frequently degenerate into fistulæ: one is that owing to an internal opening within the bowel, small particles of fecal matter find their way into the sinus, and then, acting as foreign bodies, prevent the healing; another cause assigned is, that owing to the frequent movement of the part by the sphincter muscles, sufficient rest is not obtained for the completion of the reparative process; and, finally, the vessels of the rectum are not well supported, and the veins have no valves; hence, there is a tendency to stasis which is unfavorable to rapid granulation. According to the authority of Mr. Harrison Cripps* if the fistula be divided, its surface will be seen to be lined with a smooth gelatinous membrane, which, when examined under the microscope is found to consist of granulation tissue exactly analogous to that found lining the interior of a chronic abscess. The leucocytes forming the outer wall of this membrane are but loosely adherent, and constantly becoming free, form the chief part of the pus which drains from the fistula.

### RELATIVE FREQUENCY OF THIS AFFECTION.

In point of frequency, compared with other rectal diseases, fistula is next to hemorrhoids. This statement is contrary to the showing made by the published statistics of St. Mark's Hospital, as quoted by Allingham.* This table shows that out of 4,000 cases taken consecutively, and without selection, from the out-patient department of the hospital, there were 1,057 persons suffering from fistula, and 196 from abscess, of which latter number 151 subsequently became fistulæ, so that more than one-fourth of the above number of cases treated were fistula. Allingham also states that a recent examination of the records of the in-patients at the same institution, covering a period of some years, shows that two-thirds of those operated upon were cases of fistula.

Mr. Allingham† justly calls attention to one source of error, in drawing conclusions from statistics, which, is due to the fact that many patients suffer from more than one malady. He states that "it constantly happens that a fistula is found in connection with hemorrhoids either as the substantive disease or as a complication. Again, a fissure or circular ulcer often has a sinus running from it, so that that it may fairly be considered as the opening of an internal fistula, and the case called a fistula, or the sinus is not detected and the case is called ulcer or fissure."

Another fallacious element which should not be overlooked in the statistics of Mr. Allingham is pointed out by Mr. Chas. B. Ball.‡ St. Mark's has a special reputation for the cure of fistula, so that many persons suffering from that disease go there, and in this way the records are made to show an apparent greater frequency of fistula.

Mr. Ball also states§ that at the Dublin General Hospital, although fistula is common it is by no means the commonest of rectal diseases; and in his own practice this affection has not furnished more than one-sixth of rectal operative cases.

AGE AND SEX AFFECTED.—This disease is commonly met with during middle age, but it is by no means restricted to that period of life. Allingham states‖ that he has operated upon an infant in arms and upon a man over eighty years old.

*Diseases of the Rectum and Anus, second edition, p. 152, London, 1890.

*Diseases of the Rectum, fifth edition, p. 13. London, 1888.

†*Loc. cit.*, p. 13.

‡The Rectum and Anus, p. 66.

§*Loc., cit.* p., 67.

‖*Loc. cit.*, p. 13.

Dr. Henry R. Wharton* mentions having seen a number of cases at the Children's Hospital, Philadelphia, among which he records a case of complete fistula in a child a few months old.

CAUSES.—Fistula in ano may originate in ulceration and perforation of the mucous membrane of the bowel, as the result of the irritation produced by fecal accumulations (arising from any cause, such as atony of the intestines, irregularity of habits, rectal stricture, etc.), or by foreign bodies, such as fish- or rabbit-bones, grape- or fig-seeds; etc; more frequently it owes its origin to an abscess, which is caused by injuries, such as blows or kicks upon the anus, or by exposure to cold, as from sitting upon damp seats,—especially after exercise when the parts are hot and perspiring; it may also arise from excessive irritation of the rectum, occasioned by the presence of any of the forms of parasites which frequent the anus and its immediate neighborhood.

Other predisposing causes are thrombosed veins and suppurating hemorrhoids. Abscess, and then fistula, may likewise supervene in fevers and certain depraved conditions of the blood such as frequently give rise to boils or carbuncles.†

Finally, a tubercular or strumous diathesis seems to be as potent a factor in the causation of fistula as it is in other suppurative troubles. The tendency to the occurrence of abscesses and fistulæ in phthisical patients has long been recognized and has given rise to some doubt as to the propriety of resorting to operative measures in such cases.

VARIETIES:—For all practical purposes we may divide fistulæ into the following four forms:—(1) the *complete* fistula, in which there are two openings, one in the rectum, and one on the skin more or less remote from the anus; (2) the *incomplete internal* fistula, in which there is a communication with the cavity of the rectum by means of an opening in the mucous membrane, but none with the external surface of the body; (3) the *incomplete external* fistula, in which there is an external opening through the skin, but no communication with the bowel; and (4) the *complex* fistula, in which there are many sinuses and numerous external openings. Some of these tracks run outward; some extend up the bowel, beneath the mucous membrane; whilst others travel round the bowel and open in the other buttock, giving rise to the so-called *horse-shoe fistula*. The second and third varieties named, are often spoken of as *blind fistulæ*.

SYMPTOMS.—The symptoms of fistula are not easily overlooked. Occasionally there is considerable pain present, but more frequently only a feeling of uneasiness about the anus is experienced. When a fistula originates, as I believe it most commonly does, from a pre-existing abscess, there is a sensation of weight about the anus, swelling of the integument, considerable tenderness upon pressure, pain in defecation, and constitutional disturbance associated with rigors. These symptoms are relieved after the matter is discharged. In complete fistula in ano, and in the incomplete internal variety, the evacuations are streaked or covered with pus and mucus, perhaps also slightly tinged with blood.

The chief discomfort to a patient with fistula is the discharge, in a greater or less quantity, of purulent or muco-purulent matter which is kept up from the sinus so long as it remains unhealed, soiling the linen, making it wet and uncomfortable, and producing an excoriation of the nates. The discharge is not of itself sufficient to be a source of great exhaustion, and does not interfere with ordinary occupations, so that many patients have had fistulæ for a considerable length of time and have been conscious of no serious ailment. The escape of flatus and mucus from the intestine, when present in complete fistula, will prove a source of annoyance as will also the passage of feculent matter, which will be expelled should the fistulous channel be very full.

An attack of secondary suppuration is always liable to complicate the presence of a fistula, due to a stoppage of the track by small particles of feces, or by exuberant growth of the granulations. Such a sequela, of course, is attended with pain, until a new opening is formed, or one is made by the surgeon. In some cases, the original fistulous track becomes re-established.

Fistula in some persons, more particularly those of a nervous temperament, produces an impression of physical imper-

*Keating's Cyclopedia of the Diseases of Children, Vol. III, p. 841.

†Allingham, *Loc. cit.*, p. 14.

fection and weakness in their organization, which renders them miserable. As in other affections of the rectum, various reflex or sympathetic pains are experienced in cases of fistulæ; they are referred to the back, the loins, and to the bottom of the abdomen. When such pains extend down the leg and to the foot, they are likely to be attributed to sciatica, unless the history of the case is carefully studied and a critical examination made.

Ocular and Digital Examination.—Preparatory to making an examination in cases of fistula, as well as in all other investigations connected with the diagnosis of rectal diseases, the bowels should be emptied by an enema immediately beforehand. This procedure not only renders the exploration of the part easier and cleaner but, in women especially, serves to quiet the patient's fears of any untoward accident occurring, and therefore facilitates the thoroughness of the surgeon's examination, by securing the co-operation of the patient, as, in extruding the parts, etc.

In order to examine a patient with supposed fistula, he should be placed in a recumbent posture on a table or an examining chair, preferably on the side on which the external opening is situated, with the legs well drawn up toward the abdomen and the buttocks brought to the edge of the couch.

The anus and the surrounding parts should be carefully examined to detect any apparent lesion. If the external orifice of the sinus is prominent or if there is a sentinel granulation present, the outlet of the fistula will be obvious; but where it is small and located between folds of the skin, its situation may be demonstrated by making pressure with the top of the finger in the suspected locality, which will usually cause a little drop of matter to exude.

The site of a fistula may often be detected by feeling gently all around the anus with the forefinger, and finding an induration which feels like a pipe stem beneath the skin. A probe should now be passed along the fistulous track. In doing this considerable care is requisite, and the utmost gentleness should be observed, bearing in mind that the probe is to be directed by its own weight through the sinus, and not by force applied by the hand of the surgeon. If it does not pass easily, bend it and see if it cannot be coaxed along the channel. In many cases, it will pass directly into the bowel; when the probe has been passed as far as it will go without using any force, introduce the finger gently into the rectum. This should be done subsequent to the passage of the probe as otherwise, the introduction of the finger into the rectum will set up a spasm of the sphincter muscles which will greatly interfere with the passage of the probe. When the finger is in the bowel, it will frequently come in contact with the probe, which fact demonstrates the presence of a complete fistulous track; in other cases the mucous membrane is felt to intervene between the digit and the probe. In such cases the internal opening generally exists but is difficult to discover, sometimes because the examiner searches for it two high in the bowel. Palpation with the sensitive tip of the finger will often render the presence of the inner orifice obvious, upon coming in contact with an indurated mass of tissue. If such a spot be felt, the finger should be placed upon it and the probe passed towards the finger. Make sure that the fistula is a complete one by feeling the probe touch the finger. There may not be an internal opening, if not, see how near the probe comes to the surface of the bowel.

If a doubt still exists as to the completeness of the track, a speculum may be introduced into the rectum and the outer orifice of the sinus injected with either milk or a solution of iodine, when if there be an internal opening, the appearance of the colored fluid within the bowel will set the question at rest.

If the inner opening is not discovered by these methods, the case must be looked upon as one of external rectal fistula.

According to Ball* in those cases where the probe passes away from the rectum and is directed along the anal fascia to the upper portion of the ischio-rectal fossa, or where the entire substance of the rectal wall separates the finger and the probe, the case is one either of external rectal sinus, or of fistula originating in the superior pelvi-rectal space. In such cases, Mr. Ball states "that we must go farther, and try and find the cause, such as diseased bone, etc.; and in the female a

*Loc. cit.*, p. 77.

vaginal examination may show us a uterine or ovarian origin. Where there are numerous external openings it is necessary to carefully probe all of them so as to determine whether they are all connected and the direction which they take. The upper limit of the separation of the mucous membrane should also be made out, and search should be made for the presence of more than one internal orifice, if such is likely to be present."

The presence of incomplete internal rectal fistulæ is more difficult to determine than the other varieties of this lesion which have just been considered. It is the most painful form, though fortunately it is of infrequent occurrence. Its orifice may be located anywhere in the rectum, but is generally found between the internal and external sphincters. According to Allingham*, the circumference of this opening is often as large as an English three-penny piece, its edge being sometimes indurated, at other times undermined. The feces, when liquid, pass into the sinus and create great suffering—a burning pain, often lasting all day after the bowels have acted.

In this variety of fistula the feces are coated, more or less, with pus, or blood, and a boggy swelling is noted at some portion of the circumference of the anus. A peculiar feature of this swelling is often noted—viz., its presence one day and its disappearance in a day or two, followed by an increased discharge of pus from the bowel. This fact is explainable by the closure of the outlet of the fistula, caused either by a plug of feces or as a result of inflammatory swelling, which allows the collection of a quantity of pus and the consequent formation of a boggy tumor. The swelling disappears upon the re-establishment of the communication between the bowel and the sinus, and is attended by the profuse discharge of matter previously mentioned. This phenomenon is repeated over and over again, and indicates the nature of the disease.

In other cases of blind internal fistulæ, if the orifice can be felt, or if it can be seen through a speculum, a bent probe may be introduced into it, and made to protrude near to the cutaneous surface of the body where its point can be felt.

*Loc. cit.*, p. 21.

DIAGNOSIS.—The methods of diagnosing fistula have already been sufficiently detailed. A few words, however, as to differential diagnosis may prove useful. Fistula frequently co-exists with other rectal diseases; it is therefore important that an examination should be carefully made, so as to exclude such lesions for instance, as the presence of stricture, malignant disease, hemorrhoids and other tumors, etc. A thorough physical examination of the chest should also be made, to ascertain the presence or absence of phthisis, which so frequently complicates fistula in ano.

Serious kidney disease should be excluded before recommending operation, for obvious reasons.

In cases of caries of the vertebræ, of the sacrum, or of the pelvis, fistulous tracks may form and simulate anal fistula. In such instances a careful investigation will reveal the true origin of the trouble, and will show that the case is not one of ordinary fistula in ano.

COURSE AND PROGNOSIS.—This disease, untreated, has a tendency to increase. The longer its duration, the more tortuous and complicated does it become. Hence the earlier a patient submits to treatment the more favorable will be the prognosis; and the time and extent of the treatment necessary to effect a permanent cure will be correspondingly diminished.

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## LYSOL.

Cadèac and Guinard (*Province Mèd.*, April 23rd, 1892,) have made a series of experiments on lysol, from which they draw the following conclusions: Lysol is superior as a microbicide to carbolic acid, creolin, cresyl, and other analogous products; it has not, however, any advantages over the antiseptics of established reputation. It is only really efficacious when used in solutions, which may be caustic and irritating. Although not destined to play a great part in surgery, it may often be useful in the prophylaxis and arrest of epidemics and epizootics. It is likely to be particularly serviceable in the disinfection of premises, privies, railway carriages, ships, wharves, stables, and cow-houses. It is readily soluble, sufficiently active and very cheap.—*Brit. Med. Jour.*

## ELECTROLYSIS IN THE TREATMENT FOR THE DESTRUCTION OF SUPERFLUOUS HAIRS.*

By DR. I. N. BLOOM,
LOUISVILLE, KY.

I had the honor of reading a paper on this subject before the State Medical Society, in 1887. My object in addressing you this evening is to give you the deductions drawn from five more years of constant experience in the treatment of hypertrichosis. A more extensive contact with women whose faces were marred by this deformity has shown me its importance, and its effect, mentally and physically, upon many of those affected.

In the paper already referred to I cited case of a Swiss girl who had committed suicide despairing of any other relief from her trouble. Some two years ago another similar case came under my observation, and this with the melancholia and mental effect often noted in such cases, gives the affection greater importance than is usually attached to it.

In the five years which have elapsed since I addressed the Society, electrolysis has been given its proper place in the treatment of these cases, as the sole means by which the affection can be permanently removed. The principal objections to it are, first, the scarring which results in a certain percentage of cases; second, the pain attending the operation, and, third, the time required for the removal of a large number of hairs.

As regards the first, while slight scarring may occur with a certain frequency, which cannot be foretold, in the worst exples where the operation is properly conducted, the cicatrices are so slight as to be infinitely preferable to the original deformity.

A thorough knowledge of the operation, and its technique, and good judgment in its use in special cases, must govern; otherwise the operation is unsuccessful because of want of skill in the operator, or, where the current is too strong, scarring results.

Pain in the operation is always present; but with a greater knowledge and accurate measurement of the current, it has ceased to be a factor, and I have yet to see a patient who has been deterred from coming the second or third time, because of the pain produced by the first visit. It is best to prepare the patient for the pain she is to suffer. (My patients have been, with one or two exceptions, females). There is, of course, no practical method of local anæsthesia which will obviate the pain.

With a suitable light, which must be the very best, the patient must be seated in an easy chair with head-rest, the battery properly prepared, as I shall describe later on and the negative pole is grasped by the patient after the needle connected with the positive-pole has been inserted into the hair-follicle. After a short interval of which more will be said hereafter, the circuit is broken by releasing the negative pole, the needle is removed and the life of the hair is destroyed. This, in brief, is the operation.

I wish to speak in detail this evening of its technique. The kind and number of cells of a galvanic battery is immaterial, provided a current sufficiently strong, i.e., up to three milliamperes, can be obtained. Different operators prefer different batteries. I have used two kinds, and note no difference in the effect. In order to do good work, a galvanometer is not only much more important, but is absolutely essential. With it and a rheostat, all the other trivialities can be disregarded. I use a twenty-cell Waite & Bartlett battery, because I happen to own one, and it gives satisfaction. In the circuit I place the rheostat and galvanometer, the latter measuring milliamperes. I use all the cells in order that one shall not be used up more than another, and regulate the intensity through the galvanometer by means of the rheostat. In general, I aim to use the least number of milliamperes which in ten to twenty seconds I have found by experience suffices to permanently destroy the hair. This, I find, varies on different parts of the body, and not always with the coarseness of the hair. On the chin from one to one and one-half milliamperes for an average of fifteen seconds, is my rule. On the neck a little stronger, or the same number for a longer time. Scarring is most frequent on the upper lip, and, I believe, is often due to carelessness or ignorance of the operator.

*Read before Jefferson County Medical Society, July 20th, 1892.

Here one-half to one milliampere for ten seconds always suffices. The same measure holds good for hairs on the cheek.

I never like to operate with a stiff needle. I use a platino-iridium needle, although I imagine my flexible metallic needle might do as well. It is often necessary to bend the needle in order to get at hairs which would be inaccessible to one perfectly straight; as, for instance, such as are situated low down down on the neck. A steel broach is much more difficult to handle. The point should not be too sharp, as the "catheterization" of the follicle is rendered more difficult thereby.

The success of the operation is best told by grasping the hair with a pincette. When the papilla has been reached with a sufficiently powerful current, no traction is necessary: the hair comes away at a slight touch. It is best not to let them fall out, as it is often necessary to insert the needle a second time for hairs unsuccessfully operated upon, and this can only be determined by the resistance to traction at time of operation.

I regard a sitting of an hour's duration as the utmost limit:—Indeed, after seven years' work, I have come to the conclusion that a half hour is all that should be attemped by one who has to do the operation frequently. The strain on the eyes and on the nervous system is very great, and the work after a half hour is rarely as good as it should be. In an hour's time, I can ordinarily remove from sixty to eighty hairs, and of these, on an average but three to five unsuccessfully. Where a hair is operated upon a second time, there is no pain felt, as the first operation causes temporary anæsthesia for some distance around.

A very essential caution is that of not operating upon hairs too close together. Small vesicles are sometimes formed where two are operated on too close together, and the tissue between is destroyed by the electrolytic action, and scarring takes place. Wheals occur most often on the neck, and on the cheeks, but disappear in a few hours; rarely does one see more than minute punctures the day after the operation. A skillful operator draws no blood at all, as bleeding never occurs when the follicle only is entered. It is well to allow as long a time as possible to elapse between two operations, if the hairs are close together;—a week if circumstances will permit, otherwise four days, at least.

Except in trichiasis it is not advisable to operate on non-pigmented hairs; the point of exit from the skin cannot be determined accurately, and, besides, very often an appearance of baldness is left, which to say the least is not desirable. In non-pigmented hairs the per cent. of success is much lower because the papilla is missed so often.

It is well to have an assistant to keep time, and generally a friend of the patient will serve in that capacity. It is rather difficult to watch at the same time the galvanometer and the time-piece after the needle has been inserted.

The principal drawback is the danger of scarring, and patients who have been operated upon by inexperienced operators, hesitate to undergo a risk a second time. No battery is reliable without a galvanometer. The resistance to the current offered by different patients varies, as, indeed, it does in different places on the same patient. The batteries, too, vary, not only from day to day, in strength of current, but from hour to hour. One patient grasps the electrode more strongly than does another. It takes but a few minutes to regulate the resistance by means of the rheostat, and once having registered the desired number of millamperes, there is but little necessity for changing the rheostat in any sitting to maintain the required number.

In those patients who have practiced depillation, it is more difficult to insert the needle so as to reach the bottom of the follicle; the direction of the hair seems to be changed by frequently pulling it out. The use of depilatory powders has a similar effect.

Where a mole has growing in it a number of hairs, the removal of the hairs by electrolysis causes a disappearance of the mole, and usually without leaving a scar behind it. This is especially the case where the hairs cover the whole surface of the mole, and tolerably evenly distributed. It must not be forgotten, however, that wherever the hairs exist very compactly and they are all operated on at one sitting, a scar is bound to occur from the electrolytic destruction. Where a mole is non-hairy and elevated, and of some size, I transfix it in two directions, or more, if necessary, putting on a current of three

millamperes, and keeping the needle inserted for about a minute. In such cases the resulting scar is smooth, slight, and limited to the site of the mole; it does not involve the normal tissue as is apt to be the case with acids. I have taken off pedunculated fibroids from the face in the same manner. I have never yet had even a slight hæmorrhage.

I will not speak here of the use of electrolysis in the destruction of telangiectatic vessels, nor of its value in various forms of acne. In small growths of all kinds on the face, I prefer it to the knife and caustics, for reasons already mentioned. The operation is one which requires a certain amount of manual dexterity, together with a large amount of patience. I have removed as many as six thousand hairs from the face and neck of one lady; it is by no means uncommon to find a thousand pigmented hairs.

When the hairs have been allowed to grow long, by their growth they hide the entrance to the follicle, when they exist in large numbers. In such cases I cut them off to about one-quarter of an inch from the skin. It is best if the hairs have been plucked out, to allow them to grow at least one-tenth of an inch long before operating.

If all the hairs operated upon have been in a circumscribed place, there may be a sufficient amount of swelling to be temporarily disfiguring. This occurs most often on the lip. I advise my patients in such cases to bathe the face in water as hot as it can be born for a few minutes at a time, afterward applying Lassar's paste, or benzoated zinc ointment.

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Dr. Bloom then reported briefly several interesting cases upon which he had performed the operation of electrolysis, illustrating same with his apparatus for the purpose.

DISCUSSION.

Dr. J. M. Ray: I have listened with interest to the reading of Dr. Bloom's paper, as quite a number of these cases come under our observation, especially where there are ingrowing lashes, and a number of them we operate upon. I formerly attempted more or less removal of the eye lashes, not in the elaborate manner as mentioned by Dr. Bloom, but with an ordinary galvanic battery, and the needle, a plain jeweller's broach. Dr. Bloom makes the statement that in all cases of trichiasis and distichiasis, the operation of electrolysis should be preferable to all other operations. We all know that trichiasis and distichiasis occur in the late stages of so-called granular lids, and in cases where as a result of long standing inflammation the conjunctiva becomes cicatrized, and the under surface of the lid becomes shorter than the outer surface, carrying the inner angle of the free edge of the lid with the contained lashes against the cornea. In some few cases, before the incurvation of the lid occurs, the inflammatory action extends below the mucus membrane and into the foot of the hair and thus partial trichiasis results. As long as cicatrization goes on in the conjunctiva, there is an increased tendency to incurvation of the lids and increased number of lashes that will brush against the cornea, thus keeping up the irritation.

The operations for remedying trichiasis and entropion, I think, I brought up at a meeting of the Medico-Chirurgical Society a few weeks ago, at which time I read a paper on "Plastic Operations about the Eye Lids." I am in perfect accord with Dr. Bloom in the statement that where there are a few lashes turned against the eye, the early removal by electrolysis is the method to be preferred: However, if you have a case where there is extensive cicatrization of the conjunctiva in addition to the in-turning of the lashes, you want to restore the position of the lid. The operations that we make on the edge of the lid are twofold in their nature, and really the primary part is the turning out of the inner angle of the lid margin, so as to prevent rubbing over the cornea by the sharp angle of the lid; in carrying the edge of the lid out, we also carry the lashes along with it.

In the majority of cases that I have operated upon recently, there has been extensive in-curvation of the edge of the lid in addition to in-growing of the lashes. I think where all the lashes are turned in, or, say, one-half of them, that the plastic operation, restoring the lashes to their natural position is more desirable than the removal by electrolysis, because electrolysis would produce complete baldness of the lid, which, as you know, is quite a deformity.

Referring to the cases Dr. Bloom has

seen which have been operated upon by occulists where there was great deformity as a result of in-growing tissues. Of course the result may not be perfect in all cases; while the lid may be in its normal position, still there may be a few lashes that continue to rub against the cornea on account of the operation not being infallible. In the particular case Dr. Bloom mentions, if he had seen the woman before I operated upon her, he would have noticed that every lash was turned in against the eye-ball. I made an incision along the free edge of the lid and removed a piece of skin from the outer surface of the lid, leaving a gap along the edge to be filled by cicatricial tissue, thus holding the lashes away from the cornea. In the majority of cases, in addition to extensive in-growing of the lashes, we have in-turning of the edge of the lid, and in these cases I have employed Green's modification of Von Burrow's operation, and the results have been very satisfactory.

DR. I. N. BLOOM: Concerning the use of anæsthesia in these cases, I have a great many patients come in and ask if I use cocaine. Four or five years ago when cocaine was introduced, I used it in one or two cases when operating for the removal of hairs, injecting a small amount of cocaine; but I think the administration of it gave the patients more pain than the insertion of the needle without it. I would much rather stand the pain of having fifty hairs removed than the pain of one hypodermic injection of cocaine.

As regards Dr. Ray's remarks, I want to acknowledge that I overlooked the fact that the rough margin of the lid is an important factor in causing irritation. Where the trouble is purely and simply irregular hairs, I think these hairs might be trained. In many cases you can train a number of them to grow straight. I will further state that I never saw a slighter deformity after so extensive an operation, as in the case of the patient referred to me by Dr. Ray. Another thing I quite forgot to mention is, where the trouble is simply due to in-turning of all the lashes, and there is no roughness of the lids, the operation of electrolysis would not even be justified, because baldness would follow. An operation giving new directions to the lashes would be preferable, even with slight deformity, rather than remove all the lashes. Concerning melancholia resulting from this disease; outside of the two cases mentioned I know nothing.

It may be that my successful experience in the last few years has been owing to the fact that I have been lucky with my patients, but I think the per cent. is due to the use of the smallest amount of electricity and using it for a longer time than was formerly done. However, it is barely possible that I have just been lucky, and that a slip will come soon and scars will occur in a larger per cent of the cases. I do the operation very frequently, have had as many as three cases upon which I have operated in one day.

The distress with which some women observe these hairs I want to say is remarkable, and I will mention the case of a young lady who was placed in correspondence with me by a friend. She wrote me greatly exaggerating the number of hairs, stating the trouble and annoyance caused her, etc. I told her to let the hairs grow sufficiently long, then to come here and I would operate. The young lady came down and I found that she had about fifteen rather light hairs, which were very easily removed. This young lady who was only nineteen or twenty years old, had almost been a monomaniac on the subject for three or four years.

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## CANCER IN RELATION TO INSANITY

From a somewhat extended inquiry into the above subject, Dr. Herbert Snow, surgeon to the Cancer Hospital, London, concludes that:

I. "Cancerous disease among the insane is rare.—Among individuals with congenital mental deficiency it seems to be almost wanting.

II. "Cancer is not increasing in frequency among the insane.—This fact is of no slight importance in connection with the view of cancer, as specially a disease of civilization largely caused by depressive mental emotion; and with the explanation of its greater prevalence in recent years on the ground of the increasing wear and tear which the nineteenth century life involves.

III. "Cancer not uncommonly precedes and causes mental derangement without cerebral tumor formation.—It should rank among the recognized causes of insanity."
—*Journal of Mental Science*, Oct., 1891.

# Society Reports.

## SURGICAL SOCIETY, OF LOUISVILLE.

*Stated Meeting, June 11th, 1892.*

DR. A. M. CARTLEDGE, Vice-President, in the Chair.

### RESECTION.

DR. W. C. DUGAN: I have two cases of resection to exhibit.

This patient was brought into the city hospital a few months ago, with acute inflammation of the elbow joint. He was admitted to the medical ward and had been treated by the physician in charge who thought the trouble to be rheumatism. The arm continued to increase in size, patient had considerable fever and great pain in the arm and was referred to me for operation. I decided after a thorough examination to do a resection making a long, straight incision over the posterior part of the elbow. This was done and we found a large amount of tubercular matter, and the bone very extensively diseased. I then resected the lower end of the humerus leaving just the epicondyle eminences in order to preserve the muscular attachment, making a convex section of bone. and then cut through the olecranon process and moved it on a level with the coracoid process and scraped all the synovial membrane out. The wound was filled with iodoform gauze and arm put up in extension. The arm was enormously swollen; the dressing was changed every three or five days and the splint removed in one week and the arm put in a sling. He now has practically no pain or soreness about the joint, has good movement and he is in good condition and is going to have a good arm. The operation was done on the first of March and he has improved all the time.

I desire to call special attention to the absence of lateral motion which is usually found after these operations, which I account for by the saving of the epitrochlea and epicondyle eminences to which are attached in part the lateral ligaments of the joint.

The next case is one that I have already reported, but have never shown him, hence my excuse for again referring to the case. This young man twenty-two years of age was in the city hospital a year ago, suffering with tubercular arthritis of the right knee. I decided to resect the knee joint and at the time of the operation was undecided whether we would do a resection or just an arthrectomy, so we made a transverse incision, sawing through the patella turning it back to find out if the condition of the bones were such as to call for the removal of the articulation or the scraping out of the diseased structure. But both the femur and tibia were extensively diseased, so they were sawn off and the synovial membrane all carefully dissected out. The operation was done and the leg put up in fixed dressing which was left on for three or four months. The dressing was then removed and the patient got along well, as you see here; he has as good stiff leg as one could expect to secure.

An interesting feature in the case was this: a few months afterward acute tubercular arthritis developed in the other knee; considerable fever, night sweats, etc., and the question was then what were we to do with it. I at once decided to open it, thoroughly washing out with bichloride solution and inject iodoformized oil and tamponing with gauze, and the result is here to-night to show for itself. The joint was thoroughly opened in the presence of the class on both sides and the tubercular material scraped out with my finger and Volkmann scoop, and the joint cavity treated as above indicated. It was then tamponed with iodoform gauze which was left in for about a week; at the expiration of this time the dressing was taken off, the gauze removed and the joint again filled with iodoformized oil, and left, I think, for three or four weeks. When removed the next time I found that the wound had healed entirely and from that time the patient had no more trouble. To-day but for the presence of the incision no one would suspect the joint was ever opened. I would have resected the other knee had it not been for the fact that he already had one stiff knee. I am confident that if the first knee had been treated as the last one the result would have been equally as good, for the symptoms were about the same.

I have treated a number of cases of tubercular arthritis and osteitis with iodoformized oil, and am very much pleased with it.

DR. A. M. VANCE: There is very little to be said about these two cases, except to compliment the orator. I congratulate Dr. Dugan upon the successful result and would like to ask if there was any complication or specific trouble in the last case exhibited.

DR. W. O. ROBERTS: The first case exhibited by Dr. Dugan reminds me of one that I operated upon some time since. The patient was an engineer on the railroad. The operation was performed in about the same manner described by Dr. Dugan, and the results very gratifying; he is now able to run his engine.

The case of resection of the knee joint is of considerable interest and the operation seems to have been a very successful one. I also operated on a case of this kind some time ago, where it was found necessary to not only remove the cartilages but a considerable portion of bone, and I was very much afraid that leg would not grow any more; however, it did and there was very little shortening. The result of the other knee operated upon by Dr. Dugan I think is marvelous, perfect as it could possibly be and he is to be congratulated upon the outcome.

DR. W. L. RODMAN: These cases are certainly very interesting ones, and I have never seen better results from resection of the elbow joint. I had a knee case that I expected to exhibit here to-night, but the man was a little sick and could not come. More than a year ago a tinner was working on the roof of a house and fell and ran a rusty nail into the capsule of his knee joint. I saw the man in consultation a few days after the injury. Found he had a well marked synovitis of the knee joint, I decided that something must have gone into the joint, as I believed suppuration to have taken place, and the only thing to do was to make an exploration. I found nearly a quart of pus in the capsule of the knee joint, in addition a nail without head. I made a free incision on each side, introduced two large rubber drainage tubes through which the joint was irrigated twice daily for at least two weeks. The man has gotten along nicely and has as good a knee joint as he ever had.

DR. A. M. CARTLEDGE: I think the left knee joint case is one of intense interest, as it puts side by side here in a certain measure two operations: one the resection, the other the injection of iodoformized oil; I do not think we should attribute the great benefit to injection of iodoformized oil; I believe that in many of these cases of tubercular joint trouble, a simble free incision of the joint with thorough scraping out of the tubercular matter or without scraping if free drainage is established, will be followed by the same result as when iodoformized oil is injected. I do not want to be understood as speaking against this agent, but, I believe, the same results could be obtained by simply tapping the joint. I have read the very interesting and successful results reported by Senn who used the injection in cases of this character.

DR. W. C. DUGAN: I prefer the iodoformized oil and after reading Senn's reports on this subject I am thoroughly convinced that iodoformized oil has some especial effect in these tubercular cases. I believe that the surgical literature on joint troubles should be re-written. I think many cases of acute inflammation of the joints could be hurried to a favorable termination by opening the joint early. Dr. Vance was leaving the city and left in my charge a professional base ball player with an acute suppurative arthritis. We thought that by frequent aspirations we could get along without arthrotomy; after Dr. Vance left the symptoms became more severe, and so the joint was freely opened, washed out and treated as above suggested. The patient made an uninterrupted recovery, and to-day has as good a knee as anybody and is playing behind the bat as successfully as before the accident.

### UNUNITED FRACTURE

DR. W. O. ROBERTS: Here is a patient that was before this Society some time ago. He had his leg broken in a railroad accident on March 21st. 1891. It was a transverse fracture and as I reported it was dressed in plaster which was removed at the end of twelve weeks, and there was nothing but a fibrous union with comparatively little shortening, probably about one-half an inch. I then decided for the purpose of creating an irritation we would let the man walk about and see if we could not get a bony union. This he did for some time, but no union resulted. I then used a Smith's splint with no more favorable result. In October assisted by Dr. Vance we put the man un-

der the influence of chloroform and rubbed the ends of the bones together, Smith's splint was again applied and the man allowed to walk. But soon afterward he felt that the bones were slipping and the leg was growing shorter and shorter, until finally there was a shortening of about two inches, still he was able to walk with the aid of a cane. On the 8th of March 1892, a little less than a year after the original injury, we cut down on the fractu re Drs. Vance, Dugan, Hueser and Pearce assisting in the operation. We found the bones widely separated, there were no signs of a union whatever. The ends of the bones were sawed off in such a manner that we could in a slanting way draw them together. The ends of the fracture were then fastened together with a large bunch of silk-worm gut and the leg put up in plaster dressing. The man got along without any trouble for a week, at the end of that time there were evidences of suppuration. We removed the dressing and as anticipated, found some little suppuration had taken place. We washed it out thoroughly with peroxide of hydrogen and put the leg up again in plaster. There is now perfect union of the fracture, but there is still a small fistulous opening.

Dr. A. M. Cartledge: What was your idea in using silk-worm gut for fastening the ends of the bone together?

Dr. W. O. Roberts: There were two reasons: We thought we could better sterilize it than any other material, and then the silk-worm gut is less liable to break than silver wire. If you use wire for suturing bone, and draw it sufficiently tight to firmly hold the fragments together, it is very liable to break.

Dr. Turner Anderson: I remember at the time you exhibited this patient before the Surgical Society, you stated that a successful result was very rarely obtained. The question was whether it would be desirable to attempt the operation in this case, or let the man limp along in the state as presented. Now, is this result liable to be permanent?

Dr. W. O. Roberts: I think the result will be permanent. There have been a number of the kind operated upon in this city, and, excepting one, this is the only case I know of where perfect union has taken place.

Dr. D. W. Yandell: The same thing occurred to me as mentioned by Dr. Anderson, that is how many of these operations are really successes. However, in this case, it looks as if it ought to be permanent.

Dr. A. M. Vance: I saw this patient several times with Dr. Roberts, and assisted him in the operation, the result of which you see to-night. I believe in this case the result is going to be permanent. It is the first one I have ever seen where union took place after the operation. There is one point in the case that has not been mentioned: The shortening or slipping by of the bones was so great that it required all the strength of two men after we sawed off the ends to stretch the tissues to get the ends of the bone into apposition. I believe they would have remained so without any suture, and the perfect coaptation possibly explains the good union and result. I am glad to see the good result from the use of silk-worm gut, and think this case demonstrates it to be the best suture material for bone. I do not believe in silver wire at all, it always leaves a sinus, has to be cut out, and always breaks once or twice as a rule before you have drawn it sufficiently tight to do any good.

Dr. W. L. Rodman: This is certainly a most interesting case, and the only case of ununited fracture I have ever seen where the result was so gratifying. I have never cut down upon the fragments of an ununited fracture myself, but have assisted in four or five operations and this is the only one in which union has taken place. In the other cases there was no suppuration, and in this case there was free suppuration, which may have something to do with explaining the good result. A distinguished English surgeon while in this city last fall, operated on a case of non-union fracture of the ulna. The operation was done under strict antiseptic precautions and there was no suppuration after the operation. The result at the end of eight weeks seemed to have been all that could have been desired; there was an abundance of callus, which seemed to be very firm. At the expiration of ten weeks, there seemed to be a little motion at the seat of the fracture, and less callus than there had been previously. At the end of eleven or twelve weeks motion was quite distinct, there was less callus, and apparently no bony union

whatever. The case is no better off than before the operation.

I do not agree with Dr. Vance in what he says concerning silver wire always causing suppuration. This case I have just mentioned proves that it does not cause suppuration. A large amount of silver wire was used and none of it was seen afterward. It never caused any suppuration at all, and it is in his arm now. Certainly silver wire is just as antiseptic as anything that can be used in these cases.

Dr. A. M. VANCE: I would like to ask Dr. Rodman how many times he has seen good results from the use of silver wire in the character of cases referred to.

DR. W. L. RODMAN: I only recollect one other case, but the fact is well established that silver wire is the least irritating of all suture materials.

DR. W. C. DUGAN: I agree with Dr. Vance in regard to silk-worm gut; I think it is better than any other suture material for the reason that you can apply it, and there is no breakage at all. I want to disagree with him, however, as to the disappearing of wire; I saw a case the other day that I operated upon a number of years ago for fracture of the patella using silver wire suture, and the wire is still in. Of course I recognize that we sometimes do have suppuration following the application of it. This is simply another case like that referred to by Dr. Rodman where the wire has remained in a number of years and has given no trouble.

DR. A. M. CARTLEDGE: I have had very little experience in suturing ununited fractures. In suturing the patella I have used the over-prepared gut. In the case I exhibited to this Society some time ago who was operated upon for fracture of the patella, gut was used for suture, and the patient is able to walk as well as he ever could. I still believe that the over-prepared gut is the best suture material.

In regard to the production of callus; I question if suppuration adds anything to the production of true callus. I think if we do a perfect operation and by artificial means protect the formation of callus, there is very little reason for irritation. Certainly I cannot see how a suppurative process adds anything to or induces the formation of callus. In a simple fracture the formation of callus is greater than in a compound fracture which suppurates. Now, I believe that in the fracture of bone surfaces, if we maintain perfect apposition for twenty-five days, the uniting process will be so far advanced, if it is going to unite at all, that it needs no assistance from artificial means, between the fractured ends, hence the futility of agents which remain after that period.

In this connection I would like to make a continued report of a case mentioned at a previous meeting of this Society: I refer to the man having a compound fracture of the forearm, both the radius and ulna were broken and a fragment one and one-quarter or one and one-half inches in length was broken entirely out of the ulna, there was also perforation of the radial artery. The broken fragment was removed and thorough drainage established. In twelve weeks there was firm union of the ulna but the radius has never united. The arm at the time of operation was put up in plaster dressing and everything was kept perfectly aseptic. I propose in a few days to make an incision over the radius and unite the ends of the bone by a ligature.

DR. W. O. ROBERTS: I have very little to add, except that I agree with Dr. Vance that it is probable no suture had been used the union would have been just as I believe the fragments would have remained in apposition. Treeves in his work on operative surgery, which has only been out a short time, advises that no material be used to fasten the ends of the bone together. He says all that is necessary is simply to saw off the ends of the bone and put on a plaster dressing which will hold them in apposition. This is what I believe.

DR. D. W. YANDELL: Do you think the surgeon as a rule sutures the bone for the purpose of keeping up irritation?

DR. A. M. CARTLEDGE: Partly, but it is more to obtain a perfect apposition.

DR. D. W. YANDELL: Then why do you remark at the end of twenty-five days is no need for further apposition?

DR. A. H. CARTLEDGE: If we can maintain perfect apposition for that length of time, I believe union will have taken place, provided it takes place at all.

DR. D. W. YANDELL: Do you mean to say that catgut is the best suture?

DR. A. M. CARTLEDGE: That is my opinion.

DR. D. W. YANDELL: There are so many different kinds of suture material,

that the world will never agree to which is the best.

PLACENTA FROM A CASE OF PLACENTA PREVIA.

DR. TURNER ANDERSON: I beg to exhibit a placenta from a case of previa; patient thirty-four years of age; in her third pregnancy. The membranes are intact except at point ruptured in treatment. One-sixth of the mass was inserted over the os, (previa partialis). First hæmorrhage occurred at seven months, was controlled by rest. Feeble pains and severe flooding came on one month later, which was temporarily controlled by efficiently applied tampon. I saw the case in consultation a few hours afterward; upon removing tampon the os was found dilated to about the size of a silver dollar. The pains were feeble and infrequent. The vagina soon filled with blood and very active hæmorrhage recurred. It was deemed unwise to further rely upon tampon, and the patient being given chloroform the attached portion of placenta was freely separated and membranes ruptured. The breach was found presenting, and a foot was brought into the vagina, thus effectually plugging the os with half breach. Hæmorrhage at once ceased and case terminated in birth of still child.

Concerning the treatment of this condition: I think the obstetric maxim—"That a contracting womb when emptied of its waters, cannot bleed to a dangerous extent," a most precious truth, both in accidental and unavoidable hæmorrhage. I would advise the induction of labor in previa in all cases as soon as the condition is diagnosticated; control bleeding with tampon until pains occur, and then rupture membranes, detaching the placenta from the os as far around as possible. Usually this is enough—help with forceps or version if indicated, but, remember the maxim above quoted, and do not be too hasty.

DR. W. C. DUGAN: Did I understand you to say to say that the pregnancy was eight months advanced in this case, and you simply sacrificed the life of the child in order to save the mother? Do you not think it advisable in these cases to endeavor to save the child's life by Cæsarian section, since it is clearly demonstrated that the operation as regards the mother is not very much more dangerous than an ordinary laparotomy, and at the same time the child, if the operation is done early, will be saved?

DR. TURNER ANDERSON: Owing to the condition of the patient at the time, I did not think we were justified in attempting Cæsarian section. The life of the child was not considered.

DR. W. O. ROBERTS: I have only seen one case of placenta previa, and in that case the woman came near bleeding to death. It was a vertex presentation and I did as Dr. Anderson has suggested; that is, tamponed the vagina until uterine section came on, then ruptured the membranes and accomplished delivery. In this case both the mother and child lived.

DR. W. C. DUGAN: The question I asked Dr. Anderson is one that has been brought up a number of times in cases of advanced pregnancy, after the child has arrived at the age of viability, whether or not it would be best to perform Cæsarian section after applying the tampon. This operation has been very successful in a great number of cases of pelvic obstruction, both the mother and child being saved, and the mortality acccording to the reports of American and foreign operators is so low that the operation is one of the recognized surgical procedures.

DR. H. H. GRANT: I have seen three cases of placenta previa, only one of which I saw before the membranes had been ruptured. In one of these cases Dr. Anderson reached the patient almost as early as I did, and in a very few minutes with his assistance delivery was accomplished, saving both the baby and mother.

In another instance I saw the patient after tampon had been applied by another physician very effectually, but the patient was perhaps thoroughly exanguinated and labor was very feeble. She was delivered during the night, baby dead. The patient did very well for a few days, but on the sixth day developed septic fever and died.

The other case which I saw before the membranes had been ruptured, the os was very small, tampon was applied and kept in the vagina for twelve hours, then removed but the os was not dilated and it was again applied and removed at the end of twenty-four hours when the os was sufficiently dilated to allow introduction of the hand. This was carefully done and delivery rapidly accomplished. In this instance the mother recovered without any

difficulty, but it was evident that the child had been dead for at least twenty-four hours. I think we should rely upon the tampon to control hæmorrhage in these cases, changing it every twelve hours until uterine action is established and the os becomes sufficiently dilated to deliver the patient.

Concerning the point raised by Dr. Dugan with reference to performing Cæsarian section: This is answered by the fact that only with the most favorable surroundings is this operation justifiable, and it is the exception rather than the rule that we encounter those favorable conditions in the homes of our patients. If the patients could be placed in a hospital especially equipped for the purpose, then I should favor Cæsarian section, but, under the conditions in which we usually find them, I should be decidedly against attempting it.

DR. J. G. CECIL: Dr. Anderson in his resumé of the modern treatment of placenta previa, has left us nothing to discuss. I certainly can find no point upon which I would in any way disagree with him. My experience in placenta previa is limited, but I have found the methods detailed so clearly by Dr. Anderson to be those which are the most successful in the cases I have had to deal with.

I do not agree with Dr. Dugan as to the advisability of Cæsarian section in these cases. I think it is an operation which can hardly become universal; in the nature of things it cannot, because these emergencies which arise in the practice of the general profession, that is, the general practitioner, so often are out of the reach of men who are capable of doing a Cæsarian section. Therefore, it is hardly necessary to consider it, outside of the centers of medical teaching. Then, again, those conditions under which Cæsarian section would be justifiable or advisable at all, are the very conditions which with the improved idea of managing these cases, I think, makes it rather against the use of the knife. In other words, I think cases may be managed in the manner laid down by Dr. Anderson with better hope of saving both the mother and child, than with Cæsarian section under any circumstances, at least it seems so to me. I take it if you please to operate upon a woman before she has lost much blood, before the rupture of the bag of waters, then the chances of Cæsarian section would perhaps be the thing comparatively speaking; but these are the very conditions which favor proper conservative management of these cases without the Cæsarian operation. For that reason it seems to me that the question of Cæsarian section in this class of cases will hardly gain much, if any, hold, especially among general pracitioners.

DR. A. M. CARTLEDGE: Cæsarian section in cases of placenta previa is a question that is exciting a great deal of attention, and I would like to hear it discussed at greater length.

### OVARIAN TUMOR.

DR. W. O. ROBERTS: The specimen which I exhibit is an ovarian tumor removed from a lady from a section of an adjoining State where very large tumors seem to develop, as this is the third one I have removed from patients in the same locality.

This patient was a lady sixty years of age; she first noticed the tumor about two years ago, because of the fact that it troubled her in stooping—she felt crowded about the abdomen. It is one of the largest tumors I have ever seen; it felt through the abdominal walls as though there was a great deal of solid material, especially on the right side. The patient was put on the table to be operated upon, and we detected in the lower part of the abdomen just above the pubes a rather diffuse lipoma. A large incision was made extending about an inch above the umbilicus; the first cyst we encountered was punctured, containing about two and one-half gallons, and after emptying it we were enabled to partially deliver the tumor through the abdominal incision, then it became necessary to open another cyst, and I believe before the tumor was entirely delivered, there were three cysts opened. There were no adhesions whatever of the tumor to the wall or to the intestines, but there was an adhesion of the intestine to the pedicle. After removal of the tumor there was no vessel to be ligated at all after ligation of the pedicle, but for fear the adhesion of the intestine to the pedicle might give rise to some trouble, I detached it. The cavity was thoroughly washed out and a drainage tube introduced. The tube was just long enough to reach to the bottom of the pelvis and it is one of the longest that I ever had used. I exhibit

the tube here in order that you may see its length. The operation was done last Saturday morning at ten o'clock, and Saturday night at eleven o'clock I was summoned hurriedly to the patient, the message being that she was bleeding profusely. When I reached there found her general condition good, pulse unchanged, temperature 99°. There was no evidence of loss of blood, but the bedding was considerably stained and the pus basin which had been placed between the patient's legs contained about four ounces of very red fluid. The drainage tube after the operation had been emptied every half hour and there would be at each aspiration of the tube from one to three drams of red fluid. This profuse flow came on after or during a severe retching spell. I felt satisfied from the general condition of the patient that there had been no considerable hæmorrhage, and that most likely this fluid was either some water which had not been emptied from the cavity, or the immense pressure having been removed from the walls of the abdomen, some of the capillaries had possibly given away and were oozing. Nothing was done except to remove the soiled dressings, and then to have the tube aspirated every hour. This (Monday) morning there was hardly a dram of fluid that came out of the aspirator and the tube was removed. The patient has gotten along without any elevation of temperature (over 99°) without any acceleration of pulse, and no pain.

Dr. A. M. Vance: I would like to ask Dr. Roberts if the hæmorrhage did not come from separated adhesions rather than from a new bleeding point. I do not think it is uncommon for points where adhesions have been separated to bleed moderately.

Dr. W. O. Roberts: I do not believe that the hæmorrhage could have been due to the separation of adhesions because there was only one small adhesion. There was no evidence of loss of blood, and the hæmorrhage might have been stained water left in the cavity from the operation, and the strain from retching brought the water out. Or, possibly the sudden removal of so much pressure upon the abdominal vessels caused the capillaries to dilate and some of the weaker ones may have given away, hence this accumu- h howe ver was slight.

# Selected Formulæ.

## INTESTINAL ANTISEPSIS.

℞ Salol.....
Salicylate of bismuth,..... } ää 150 grains.
Bicarbonate of sodium.....

Sig.—To be divided into 30 powders in capsules. One capsule to be taken before breakfast and before dinner.

—*Dujardin-Beaumetz.*

## NASO-PHARYNGEAL AND LARYNGEAL SYPHILIS.

Dr. Griffin (*Deutsche med. Wochenschrift*, No. 1, 1892) praises the following formula in the treatment of the naso-pharyngeal and laryngeal manifestations of syphilis:

℞ Calomel..... 4 grams.
Powdered opium..... 2 "
Lime water.....375 "

This is used, according to the severity of the disease, either pure or diluted with equal parts of water, as a gargle in pharyngeal phenomena, as an irrigant in the nasal manifestations, and as a spray in the laryngeal symptoms. He has obtained excellent results with this formula.

## INTESTINAL FLATULENCE.

CACHETS.

℞ Powdered nux vomica.....1 gram.
Powdered anise. .....2 grams.

Mix, and dispense in 10 cachets. One, twice daily, before meals.

MIXTURE.

℞ Columbo ..... } of each, 3 parts.
Ether spirit..... }
Star-anise tincture ..... } of each, 1 part.
Nux-vomica tincture..... }

Twenty drops before each meal.

—*Potain.*

## PARACREOSOTATE OF SODA IN THE INTESTINAL CATARRHS OF CHILDREN.

Dr. Egaye (*Bulletin générale de Thérapeutique*, January 30, 1892) recommends the following formula:

℞ Sodium paracreosotate.....1-2 dgrams.
Tinct. of opium.....2-4 gtts.
Cognac.....1 gram.
Syrup of gum arabic.....5 grams.
Distilled water.....25 "

A teaspoonful every two hours.

## PLANT'S ASTHMA CIGARETTES.

The *Pharmaceutische Post* gives the following formula for these cigarettes:

℞ Stramonium leaves.....8 parts.
Pulverized green tea leaves.....8 "
Lobelia leaves..... .....7 "

Mix, and moisten with a saturated solution of potassium nitrate. Dry thoroughly and preserve in hermetically sealed cans.

THE

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## Leading Articles.

### HYSTERICAL FEVER.

The varied and peculiar manifestations of hysteria always form an interesting study, and as they are apt to prove most discouraging to the attending physician, any light on the subject is acceptable.

Hysterical fever has for some time been a recognized form of the disease. This fever is manifest either as a continued or paroxysmal fever. The continued fever is analogous to the continued sensitive disturbance, such as anæsthesia; while the paroxysmal form correspondes to the more transient anæsthesia and hysterical convulsions.

Naturally both forms of hysterical fever can follow each other in a complicated form, as well as in a series of lesser hysterical attacks, interrupted by more severe attacks; just so it is possible that during the continued hysterical fever, attacks of paroxysmal fever may also occur. Under the nomenclature of true hysterical fever, only such cases should be included where the temperature does not exceed 38.50° C.

Dr. Athur Sarbó, in the *Deutsche Medizinal Zeitung*, describes a well developed case of hysterical fever which occured at the Psychiatric Clinic in Budapest.

The patient, who was a girl sixteen years old, fell ill nine months prior to her admission to the hospital. The disease originated in this way, the patient had suddenly been brought in sight of a corpse, without having been prepared for the shock. She immediately fainted. She then became cyanotic, and had severe clonic convulsions, which, however, ceased when consciousness returned, but recurred again once or twice a week. The father of the patient was a hard drinker, and a relative on the father's side was neurotic.

The condition at the time of admission wsa as follows: The patient was a well-

nourished woman; the pupils were large, the right slightly the larger, but both reacted well. The sight of the patient was limited, and the right ear rather deaf. On the right side of the nose the patient could not detect the odor of acetic acid. On the right side of the face as well as of the body there was a complete anæsthesia of the skin, and also an absence of any sensation of temperature. On the right side no active movements could be made, and the temperature of this side of the body was less than that of the right. No other abnormalities could be found.

During her one month's stay in the hospital, the patient suffered occasionally from dizziness and constipation. Now followed the stage of fever. On the morning of November 12th menstruation began, the patient having a temperature of 38.9° C, and immediately after was seized with an hystero-epileptic attack, lasting twenty-three minutes. The following day the temperature was 38.5° C, and on the next two days it was 39.1° C.

For two weeks these attacks continued in spite of the liberal administration of quinine, antipyrin, phenacetin, etc. No enlargement of the spleen could be felt at any time; during the fever both pulse and respiration became accelerated.

Regarding the ætiology of hysterical fever, Chau-Neau is of the opinion, that it occurs either primarily, without any assignable cause, or else secondarily, as a reaction of the strained nervous system.

According to Sarbó, hysterical fever is characterized by the very fact that there can be no reasonable cause found for its presence. The manner of the beginning of hysterical fever, its sudden appearance and disappearance, and its attitude towards antipyretics in general, make its diagnosis comparatively easy. Another symptom, although not always present, is a very high pulse, and but little rise of temperature. The therapy should be directed towards the disease rather than the fever. Symptomatically, antipyretics may be given, but they accomplish little or no good. The expectant treatment is about the best after all. If the fever lasts for several weeks general stimulants should be given.

---

## INTERNAL ANTISEPSIS

Oddities and novelties in medicine form not infrequently quite interesting reading. In these days of skepticism an exuberant amount of faith in any method is pleasing to see. So it is with interest that we read the *Medicinische Neuigkeiten's* graphic, yet almost humerous, account of Dr. Vopelius' "New Theraphy," which he has recently advanced or rather hurled upon the medical profession as a finished work—a laurel crowned invention—which is destined (according to Vopelius) to reform the entire practice of medicine. Our esteemed German contemporary seems inclined to take the whole thing as a bad joke especially in the face of the present almost nihilistic attitude of the profession.

The principle of the new therapy, is simple enough, consisting merely in a system of treating all diseases antiseptically by means of suitable remedies given internally. It is said that "harmless" antiseptics are suitable for the cure of "all" diseases. Those best adopted for the new treatment include creasote, for chronic diseases; creolin, for affections of the vascular system; and lysol, in parenchymatous disturbances. In cases of fever, antipyretics and in old cases, iodide of potassium should be administered as well.

Traumatisms, crushes, as well as simple and complicated fractures heal "without rise of temperature, and in the shortest possible time" under the influence of creolin given internally. The influence of

creolin given internally in erysipelas, phlegmons, carbuncles, catarrhs and inflammation of the joints was "truly startling." Without the use of any external remedies, other than the necessary surgical operations, the diseases, says Vopelius, will be cured "in as many days, as it formerly was weeks, by the old method." The most severe cases of pernicious anæmia (chlorosis) disappeared in eight or ten weeks after the daily exhibition of 5.0 grammes to 8.0 grammes of creolin. Severe cases of scrophula, suppurations of the bones, amyloid degeneration of the liver, spleen, and kidneys, all recovered within three months. Old leg ulcers healed up after four or five weeks internal use of creolin, without any local treatment whatever; chronic polyarthrites, with beginning deformities, recovered within six months. If in such cases creolin does not prove of sufficient potency by itself, then, "creosote is called into action, as heavy artillery, in order to completely route and vanquish the foe."

Still more astounding are the virtues claimed for lysol. "Scarlet fever, measles, typhoid and diphtheria are no longer to be feared with this remedy at our hand" says Vopelius confidently. Two cases of diabetis mellitus were cured, three still under treatment are greatly improved, as well as two cases of Bright's disease.

"The greatest and most wonderful success," says Vopelius in thick, fat type, "that I have achieved by means of my internal antisepsis, has been the extraordinarily favorable action of lysol in carcinoma. For the past six months, I have been treating five cases of carcinomatous diseases, including one case of rectal carcinoma (in which specialists had already determined to perform extirpation of the rectum) one of carcinominata of the liver and peritoneum, one mammillary carcinoma (which also was to have been excised) and one carcinoma of the uterus, with large doses of lysol, giving daily as much as ten grammes. All five cases have improved to such an extent, that to-day I regard lysol as an unfailing remedy against this worst enemy of the human body." The "unfailing" is rather prematurely used to say the least. "The diagnosis" says Vopelius, "becomes greatly simplified." Perhaps even superfluous, näivly adds the Editor of the *Medicinische Neuigkeiten.*

"Since the bacteria is the disease *par excellence,*" then "the seat of the disease is no longer of diagnostic importance, but rather, the nature and propagation of the germs."

Under the chosen heading of "nervous," Vopelius classes such diseases as neurasthenias, dyspepsia, epilepsy, etc.; these, he says, have their origin in organic disease foci, old scars, dyscrasiæ, commencing parasitic growths,etc.," Diseases such as scrophulosis, tuberculosis, carcinosis, etc., are directly hereditary (not the predisposition),in that the most minute ovulæ of the respective microbes of these diseases are contained in the semen of the man or the ovum of the woman.

There is a deep satirical vein in the remarks of the *Medicinische Neuigkeiten*, when its editor highly commends Vopelius, who being "merely a country practitioner," and not a professor in some great University permits the results of his discovery to be published in a local medical journal instead of telegraphing the same to all the leading newspapers of the country.

Editorially we graciously decline from making any comment upon the discovery of "Internal Antisepsis," leaving our readers entirely free to form their own opinions. Yet there may be some good in it,wild and as absurd as the scheme may seem. Vopelius writes in sincerity and from undoubted conviction, and the day may come when this form of internal antisepsis may be looked upon as a valuable therapeutic method—stranger things than this have happened; and after all "he who laughs last, laughs best."

# Correspondence.

## TREATMENT OF HICCOUGH.

*Editor of* THE MEDICAL AND SURGICAL REPORTER:—In your number of August 20 you gave some attention to hiccough, having three short articles, two of which deal with Leloir's method of digital compression of the phrenic nerve. I have used this method, together with a modification of my own, for a year and a half and have never had it fail, even in obstinate cases. I compress each nerve with the thumb and fingers of each hand, near the sternal end of the sterno-cleido-mastord muscle. Since hiccough is due to spasmodic action, or clonic spasm, of the diaphragm the efficacy of this mode depends upon the production of an inhibitory state in the phrenic nerve, the motor nerve of the diaphragm. Compression alone has sometimes failed to produce suppression of the spasmodic action—probably owing to difficulty in securing *perfect* compression, especially in the right nerve which lies a little deeper than the left. Therefore I supplement compression by the following: make the patient take deep, complete, slow, rhythmic inspirations (about 12 or 14 per minute) followed by similar expirations. These slow, rhythmic movements seem to effectually afford supplemental aid to compression in combatting the quick, jerky, spasmodic movements of the hiccough. In fact, this method has always succeeded, even in the *few* cases in which compression alone failed.

This treatment is not only more efficacious than medication, which is so seldom effective but is, moreover, practically instantaneous, its effects being observed in from one to two minutes.

Very sincerely,

CHARLES M. BUCHANAN, M. D.,
Washington, D. C.

## ELIXIR OF CASCARA SAGRADA.

Dr. Dujardin-Beaumetz (*Le Bulletin médical*, No. 10, p. 179, 1892) proposes the following formula for an elixir of cascara sagrada:

℞

| | |
|---|---|
| Fl. ex. cascara sagrada | ää 90 grams. |
| Glycerine | |
| Essence of orange | vi gtts. |
| Essence of cinnamon | 15 " |
| Alcohol | 300 grams. |
| Simple syrup | 400 " |
| Water, ad | 1 litre. |

A wineglassful after each meal. Useful in habitual constipation.

# Periscope.

## THERAPEUTICS.

### CHLOROFORM IN THE TREATMENT OF TYPHOID FEVER.

According to the *Lancet*, Dr. P. Werner has treated 130 cases of typhoid fever with a one-per-cent. solution of chloroform, the employment of which was suggested by Behring's observations of the germicidal action of chloroform upon the bacillus. Werner gave a tablespoonful of the solution every hour or every two hours during the height of the disease and for some days after the temperature became normal. In all cases in which this treatment was adopted before the tenth day great improvement was manifested; the tongue did not become brown, diarrhœa and tympanites gradually disappeared, there was no tendency to bed sores, and relapse was very rare. His observations agreed with those of Steppe, who used the drug in 1890 in this disease. Possibly we may have in this a desirable substitute for the so-called Brand treatment, of which Osler says in his recent work: "To transfer a patient from a warm bed to a tub at 70° F., and to keep him there twenty minutes longer in spite of his piteous entreaties, does seem harsh treatment, and the subsequent shivering and blueness look distressing. A majority of our patients complain of it bitterly, and in private practice it is scarcely feasible." —*N. Y. Med. Jour.*

### ELECTROSTATIC TREATMENT OF STRANGURY.

Benedikt (*Wien. med. Presse*, No. 27, 1891) gives notes of two cases of strangury that were quickly relieved by applying the electrostatic douche and sparks to the spine and hypogastrium. Previous treatment had failed to ameliorate. Case I was tabes of long duration, strangury being the most distressing symptom. Relief of this condition was increased by each application. In case II the affection followed an operation for hæmorrhoids many years before. Immediately after the first sitting the number of nocturnal micturitions sank from twenty-five to nine. A fortnight's treatment reduced the abnormal state to a minimum. More recent successful cases lead him to view this therapeutical means as a specific.—*Brit. Med. Jour.*

## FURTHER OBSERVATIONS ON EXALGINE.

Our knowledge of the therapeutical action of this, the latest addition to the invaluable series of analgesics, is gradually being extended. There are already very favorable reports by various competent investigators in the treatment of various neuralgic manifestations, and Dr. Gordon, of Aberdeen, contributes a further series of observations which seem to show that in doses not exceeding from four to six grains exalgine may be relied upon to relieve the pain in lumbago, intercostal and facial neuralgia, and similar painful manifestations of a neurotic type. In locomotor ataxy it abolished the formidable "lightning pains," and even the pain of rheumatoid arthritis, in a certain proportion of the cases, proved amenable to its analgesic action. Dr. Churton, of Leeds, on the other hand, contributes some interesting notes of a case of Graves' disease in which small doses of exalgine not only relieved the painful ocular symptoms, but determined the immediate subsidence of the local congestion. The genuineness of the effects thus produced was controlled by critical observations carried out with other remedies, all of which utterly failed to afford the relief which invariably followed the exhibition of exalgine. Dr. Churton's observations lead him to conclude that exalgine is in no sense a "cumulative" drug. In one case three eight-grain doses, equal to twenty-four grains, were taken within half an hour without giving rise to any symptoms beyond a feeling of being "dazed," with dryness of the mouth and fauces. This fact is interesting in view of the somewhat alarming effects occasionally reported as having followed even small doses.—*Med. Press.*

## THE VALUE OF OPIUM IN MELANCHOLIC STATES.

At the meeting of November 27th, 1890, of the Netherland Psychiatric Society at the Asylum in Utrecht, Holland, the value of opium in melancholic states was discussed. Dr. Winkler sets forth two conditions in which opium is of value. (1) In anxious states; indeed, the writer has often succeeded in aborting these conditions by means of large doses of opium. (2) In alternating psychoses with insomnia; here small doses act best. Dr. van Parsijn would not be without the remedy. He has seen several cases of melancholia where the remedy gave good and lasting results; these were chiefly recent cases where the action was striking. He never uses morphine in such cases, but prefers opium. Dr. Doedes Breuning finds that the use of opium in the Dutch asylums is greatly decreasing. Dr. van der Sith would limit the use of opium to acute cases. He quotes Schroeder van der Kolk, who used it only in pure melancholia.—*Psychiatrische Bladen*, Deel IX, Afl. 1.

## DIGITALINE.

Fouquet, in his study of digitalis, claims that it contains a well-defined, active principle possessing the valuable properties of the plant; the other constituents, which are less active, are sometimes sold under the name of digitaline. The following classification is made of the digitalines:

1. Digitaline soluble in chloroform and insoluble in water—crystalline digitaline, amorphous digitaline, digitoxine digitaline.

2. Those insoluble in chloroform and soluble in water—German digitaline, digitalein.

Of the above, only those of the first group should be used in medicine, preference being given to the crystalline digitaline.

He further concludes that digitaline should not be administered in granules, but advises it to be prepared in a standard solution made with glycerine, alcohol and water, each c. c. to contain one milligram of digitaline.

In addition to this, we may say that the varieties which have received the greatest amount of notice, are Homolle's amorphous digitaline, Nativelle's crystallized digitaline, and the soluble or German digitaline. Schmiedeberg claims there are at least five principles present in it, as well as the possibility of some products of decomposition. They are all nitrogenous, and with the exception of one *digitoxin*, are glucosides. "They are *digitoxin*, *digitalin*, *digitalein*, *digitonin* and *digitin*. The first three are cardiac poisons, digitonin acts like saponin, and digitin appears to be inert.

"Digitoxin is insoluble in water and forms the chief constituent of Nativell's digitaline. Digitalein differs from the two former in being readily soluble in water, and forms a large proportion of the soluble digitalin."

### ARTIFICIAL PRODUCTION OF ABSCESSES IN PNEUMONIA.

L. Bard (*Lyon Mèd.*, April 17th, 1892) reports a third case in which the artificial production of an abscess by the subcutaneous injection of essence of turpentine see (*Epitome*, March 12, 1892, par. 223, and April 23rd, 1892, par. 370) in a bad case of pneumonia was followed by resolution and ultimate recovery. The patient was a man, aged 49, who had been suffering from pneumonia of asthenic type for nine days. As there was no appearance of resolution, and the patient was very weak and was steadily losing ground, three-fourths of a cubic centimetre of essence of turpentine was injected into the arm. The temperature fell the same evening, rising again the next morning in response to the local inflammatory reaction following the injection, and then gradually falling to normal. The patient's general condition showed marked improvement as soon as the suppurative process began, resolution took place, and the patient left the hospital completely cured. Bard points out that the case shows that the method is unattended with danger; his patient was in a state of grave adynamia with albuminuria and extensive atheroma of his arteries, yet no untoward effects followed the injections.—*Brit. Med. Jour.*

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### SOLANINE IN PAINFUL DISEASE OF THE STOMACH.

At a meeting of the Paris Academy of Medicine on March 22nd (*Sem. Méd.*, March 23rd, 1892), Desnos read a paper in which he recommended solanine as a useful substitute for morphine in painful diseases of the stomach. The drug is in a general way inferior to morphine, but it sometimes succeeds where the latter has failed, and it is likely to be of use where morphine is not well borne, or where the establishment of the moprhine habit is feared. Desnos has used solanine in a large number of stomach affections—gastralgia, dyspepsia accompanied by pain, alcoholic gastritis with or without dilatation of the stomach, etc. In a case of ulcerated gastritis with hæmatemesis, in a case of old gastric ulcer, and in some of cancer of the pylorous with vomiting, the painful symptoms quickly disappear under the use of solanine. Desnos gives the drug in pills, hypodermic injections causing too much pain. The usual dose is is 5 centigrammes given half an hour before meals; when the pain is very acute, solanine may advantageously be given in a gummy solution. The total amount given in the twenty-four hours never exceeded 15 centigrammes.—*Brit. Med. Jour.*

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### A TREATMENT OF SHOCK.

In the *Correspondenzblatt für Schweizer Aerzte*, 1891, No. 24, S. 745, Dr. A. Kottmann gives the details of the transfusion of salt water in the left cephalic vein to the amount of twenty-four ounces with a transfusion syringe. In cases when anæsthesia during shock is necessary he recommends ether instead of chloroform for this purpose. In cases of collapse, especially in pyæmic conditions, he combines these two method with success, operating under ether anæsthesia, and hoping, through the transfusion of salt water, to prevent shock, and as well to free the tissues from the poison. He cites successful cases in support of these methods of procedure.

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### STRYCHNINE IN INEBRIETY.

Dr. R. M. Phelps, First Assistant Physician to the Second Minnesota Hospital for Insane, gives in the *Hospital Bulletin* the following results of a series of investigations into the use of strychnine in inebriety:

1. Nitrate of strychnia, taken steadily in large doses, has a tendency, first, to impair the appetite for liquor; later, to make liquor an incompatible or sickening agent for *the time being*.

2. The systemic effects of nitrate of strychnia seem to be not injurious. Yet I would be far from advising any private or injudicious use.

3. Chloride of gold and sodium was only given in small doses the last five days of the twenty-one, and it is only mentioned here because it seemed to bring out a positive sickening effect in several who had before only a feeling of *indifference*.

4. The systemized methods of administration are important, because the physician is dealing with remedies in doses to be recommended only under close supervision.

## MEDICINE.

### THE PRODUCTION OF HEAT IN FEVER.

For many years a controversy has been carried on as to the cause of the rise of temperature in fever, one school arguing that such rise depended on increased oxidation, while the opposite school, of which Traube may be regarded as the exponent, considered the rise to be due to the retention of heat—that is, to a diminished discharge of heat by the body. With the view of settling this question, Professor Rosenthal (*Berlin. klin. Wochenschr.*, August 10, 1891) has recently, with the aid of his air calorimeter, carried out a research on the lower animals, using especially rabbits, in which pyrexia was caused by the injection of phthisical sputum, infusion of hay, etc. The result showed that the discharge of heat from the body was diminished, while the temperature was rising, Traube's view therefore being confirmed. The next point whsch Rosenthal set himself to investigate was whether during the onset of fever there was any increased production of heat, or whether the rise of temperature might be wholly due to diminished loss. The calorimetric experiments failed to supply any evidence of increased production of heat; in short, the rise of temperature appeared to be wholly due to diminished discharge of heat. Rosenthal is careful to limit the above conclusion to the animals under experiment (that is rabbits), in which pyrexia was produced in the manner indicated. A broader generalization must await further investigation. Nevertheless, a number of observations have already been made on sick persons in state of fever, and the evidence obtained, although not yet complete, points in a similiar direction, as stated above.—*Brit. Med. Jour.*

### CROUPOUS RHINITIS.

M. Hunt reported a case before the British Laryngological Association. The initial symptoms were profuse, serous discharge from one nostril, with marked obstruction. Slight rise of temperature, 100° F.

The occluded nostril was lined with thick, white membrane. The mucous membrane of opposite side swollen and congested but without deposit. The deposit was removed easily, leaving a raw surface that bled slightly. The following day same deposit found in nostril, also on surface of faucial tonsils. The latter did not bleed on removal of exudate.

After removal, the denuded surface was brushed with sol. of argent. nitrat. (twelve per cent). The membrane disappeared fifteenth day from commencement of attack, and was followed by free mucopurulent discharge, lasting for ten days.

By microscope, the exudate consisted of basement of fibrin, fibrillous and granular, leucocytes and epithelial cells.

The absence of any nasal traumatism, of constitutional disturbances, of renal symptoms, and of diphtheria in surroundings, is the warrant for the diagnosis.

### HEMIPLEGIA AFTER DIPHTHERIA.

Auerbach (*Deutsch. med. Woch.*, February 25th, 1891) reports the following case: A girl, aged 7, had extensive diphtheritic membrane on the tonsils and soft palate. On the eighth day of the disease the speech had a nasal twang, on the twelfth the urine contained albumen and casts, and on the fourteenth there was œdema about the eyelids. On the twelfth day the patient had convulsions for ten minutes, followed by coma, which lasted during the following night. There was almost complete anuria, but no vomiting or dyspnœa. The pulse was tense. The next day there was complete left hemiplegia, including the face, together with difficulty of speech, which latter passed off in a fortnight. The patellar and superficial abdominal reflexes were absent on both sides for a week. By the twenty-eighth day the œdema, which had been considerable, diappeared. In the seventh week the patient could lift the left leg about half as high as the right, and in the ninth week the arm began to improve. The recovery, though considerable, remained incomplete. The intelligence was unaffected. The author says that the hemiplegia was due to cerebral hæmorrhage, the onset excluding embolism, and that there were symptoms present in this case independent of the cerebral lesion, namely, paralysis of the soft palate, disturbance of co-ordination, and loss of reflexes. Auerbach then refers to the vascular changes found in the infective diseases and would attribute the

hæmorrhage to this fact, combined with the increased vascular tension brought about by the renal affection.—*Brit. Med. Jour.*

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### DILATATION OF THE CHEEKS IN GLASS-BLOWERS A CAUSE OF DISEASE.

According to *Le Progrés Mèdical*, the Société de Biologie, of which M. Brown-Sequard is president, received from M. Regnault, of Marseilles, at its session on November 7th, 1891, a communication on a disease which is met with in about one third of the workmen. This condition does not attain complete development until the men have been from ten to fifteen years at the business. They are taken into the glass factories, usually, about fifteen years of age; and at first the young workmen complain of great fatigue and a painful feeling in the cheeks which extends to the ears; later, the cheek becomes gradually weakened, is easily puffed out, and the deformity, of which the cases presented were in an advanced stage, progresses steadily. This deformity is caused principally by the weakness of the buccinator muscle, whereby the cheek becomes swollen and permanently enlarged.

The swelling is limited by the masseter muscle. There is also a special dilatation of the duct of Steno, the calibre of which is increased and the orifice enlarged. This duct is filled with air, which may be forced out by pressure on the external surface, when a distinct gassy sound is heard.

The functional symptoms are inconsiderable. It happens very rarely that food is detained a moment between the cheek and the dental arch. There is no pain attending it, nor any disturbance of the salivary glands. Sometimes there is a thickening of the epithelium of the mucous membrane of the cheek.

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### RELATIONS OF ALBUMINURIA TO PSYCHOSES.

In an article on this subject Dr. Raymond says that the albuminuria present in mental disease, is either dependent upon the affection of the nervous centers, or is due to disturbance in the renal function, in which case it may become the direct cause of mental ailment; sometimes a relapse of the latter may go hand in hand with a return or increase of the albuminaria. In alcoholists the amount of albumin in the urine varied with the intensity of the delirium, and it often occurred in the delirium of alcoholism, when, in the case of death of the patient, no affection of the kidney could be found. In other forms of mental disease albuminuria is met with principally in the acute stage; frequently a certain relationship between the degree of the delirium and that of the albuminuria is noticeable. Upon administration of digitalis the œdema disappears, the albumin in the urine is increased, and the delirium passes away. The albuminuria, therefore, brings about a poisoning of the system, which, under certain circumstances, gives rise to the development of or causes an increase in the psychical disturbance. In the course of chronic nephritis delirium, simulating insanity, may occur with the uremic intoxication. The cases reported by the author illustrate this. The maniacal excitement, combined with religious and erotic delusions and hallucinations, occurred in individuals having no hereditary disposition during attacks of uremia of chronic nephritis. Dieulafoy calls this disease "folie brightique." The treatment of these cases does not consist of the application of the cold douche, nourishment, etc., but must be directed towards the affection of the kidney; exclusive milk diet.—*Centralblatt f. klin. Medicin.*

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### NOTES ON PRICKLY HEAT.

Dr. J. A. Wetherell, writes in the *Lancet*: Under the term "lichen tropicus" must be embraced three primary lesions, in frequency taking the following order:—1. A vesicular eruption, the vesicle, of the size of a pin's head, elevated on a roseolous, inflammatory base, being filled with colorless perspiration; sometimes arranged in segments of rings, at others diffusedly spread. On a superficial examination, it resembles much the efflorescence of measles or scarlatina, and occurs principally on the nape of the neck, the flexor surface of the forearms and legs, and the front of the abdomen. Even habitants for many years of semi-tropical regions are apt to exhibit this form, especially those who wear woolen underclothing. 2. A wheal with a red surrounding halo, accompanied by intense itching, which induces the sufferer to scratch off

the covering cuticle, causing the erythematous effusion to develop a blood-scab. Its characteristics are shown on the backs of the hands and about the ankles, and may be mistaken for mosquito bites. 3. A coppor-colored papule of largish dimensions, on whose surface after twelve hours may or may not appear a pustule. The front of the throax exhibits this best. The older pathology which regarded prickly heat (lichen tropicus) as a papular eruption, and the more recent, as vesicular—hence termed "miliara papulosa"—are both partially correct, but also erroneous, inasmuch as they recognize a single lesion. The treatment of all consists in washing the affected parts frequently with superfatted menthol, euclyptol, or phenol (20 per cent.) soap, allowing the rubbed-in foam to dry, then mopping on with a soft linen rag this lotion: liquor plumbi subacetatis, liquor carbonis detergens, and glycerine, of each one ounce; rectified spirit of wine, three drachms; oxide of zinc, two drachms, to a pint of water; or smearing with the following ointment: vaseline, two drachms; lanoline, two ounces; liquor carbonis detergens, two drachms; oxide of zinc, one drachm; menthol, twenty grains. If of limited extent, a bismuth and zinc powder may replace these. Cotton underclothing should be adopted and frequently changed.

## SURGERY.

### IRREDUCIBLE DISLOCATIONS OF THE GREAT TOE AND OF THE THUMB, TREATED SUCCESSFULLY BY OPERATION.

Lloyd (*Lancet*, London, February 27, 1892) describes an operation for irreducible dislocations of the thumb and great toe, with a report of two cases.

The first case was a backward dislocation of the toe, the result of a fall from a horse. Attempts at reduction were made, but without success. An incision, two inches long, was then made, with its centre over the head of the metatarsal bone. The head of the bone was found thrust petween the heads of the flexor brevis pollicis. The anterior ligament, with the sesamoid bones, was torn away and had "shut back" behind the rounded head, constituting the chief if not the entire obstacle to reduction. The anterior metacarpo-phalangeal ligament was divided freely, freeing the sesamoid and permitting easy reduction. The wound between the ligaments and muscle was closely sutured, and the wound dressed antiseptically. The patient was about his work in a few weeks, and suffered no inconvenience.

The second case was a backward dislocation of the thumb, the patient presenting himself three months after the injury. A similar operation, as above described, was performed, and with a like result.

Lloyd advances several theories as to the cause of irreducibility. The one most generally accepted, is that the bone is tightly grasped by the two heads of the flexor brevis pollicis. A point of great importance lies in the fact that the head of bone pushes its way through the muscle, above the level of the sesamoid bones; the anterior metacarpo-phalangeal ligament being torn from its metacarpal attachment, these two structures, which are closely incorporated, "shut back" behind the protruding head and become closely applied to the anterior part of the articular surface of the displaced phalanx. The "shutting back" of the structures is due partly to their own elasticity, and partly to the pull of the short muscle; of the thumb and toe. In rare cases of dislocation of the thumb, the long flexor tendon gets between the ends of the bones. *Lloyd* thinks that excision of the joint, in these cases of dislocation, is necessary.—*Univ. Med. Mag.*

### COMPOUND DEPRESSED FRACTURE OF THE SKULL, WITH VERY EXTENSIVE LACERATION OF THE BRAIN AND HÆMORRHAGE FROM THE SUPERIOR LONGITUDINAL SINUS.

By Dr. Bensel. Patient, thirty-eight years of age, was struck on the forehead with a heavy beer glass. Lost consciousness for a few moments only, then recovered sufficiently to walk. Was transferred to hospital. On admission was perfectly conscious, but very nervous and irritable. Pulse slow and full; pupils dilated; skin warm and dry; respiration normal. Extensive sub-conjunctival hæmorrhage, so that patient could with difficulty close the eyelids. A wound, two inches long, extended transversely across the middle of the forehead immediately above the supraciliary ridges, with extensive depressed fracture. Patient refused consent to operation until next evening, when sub-con-

junctival hæmorrhage had become so great that it was impossible for him to close his eyelids over the protruding eyeballs. The depressed portion of bone was found to be almost completely detached from the surrounding bone, and depressed for about half an inch, tearing the meninges very extensively. The removal of the detached bone was followed by a tremendous hæmorrhage from the superior longitudinal sinus. Author used the sliding catch of a Langenbeck artery clamp as a lever to control the hæmorrhage. There was a laceration of the frontal lobe of the brain on the right an inch and one-half deep, and one on the left nearly half an inch deep. Wound packed lightly with bichloride gauze; dressed and bandaged in the usual way. Patient made an incomplete recovery. —*New York Med. Jour.*, Jan. 16. 1891.

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### ANEURISM OF THE RENAL ARTERY.

Oestereich (*Berlin klin. Wochenscher*, 1891, No. 42.) publishes two cases of aneurisma arteriæ renalis:

1. Sacculated aneurism of a branch of the left art. ren. located inside the kidney. Dilatation and tortuosity of numerous branches of both renal arteries (particularly the left) in a case of endarteritis chronica deformans. Breaking through of the aneurism into the renal pelvis; rupture; death from hæmorrhage.

Patient was a woman æt. fifty, who had commenced to bleed from the genitalia fourteen days before death.

2. Sacculated aneurism art. ren. dextr. attached to the trunk of the vessels outside of the kidney. Patient a young man.

No symptom of aneurism during life.

According to Oesterich the local semiology of renal aneurism is:

*a.* The tumor. Aneurisms of a certain size easily palpated, eventually pulsating, lying behind the colon as a tumor. This is the most certain diagnostic sign of renal aneurism.

*b.* Auscultatory findings, systolic or diastolic gassy bruit.

*c.* Hæmaturia appearing first when perforation occurs into the renal pelvis.

*d.* Pain inconstant.

1, Renal calculus; 2, Renal tumor; 3, Renal rupture; 4, Hæmophilia renalis.

Prognosis bad, because the uncomplicated outcome of renal aneurism must be inevitable hæmorrhage.

### THE OPERATIVE TREATMENT OF PERICARDITIS.

At the meeting of the (*Berlin Medical Society*, Jan. 6. 1892,) Dr. Kœrte reported a case of pericarditis which he had cured by operative measures. The patient, a girl aged seven years, had developed the disease as the result of osteomyelitis of both tibia. Aspiration of the fifth intercosal space furnished thin pus rich in staphylococci. The operator resected a portion of the fifth rib. 5cm. in length, opened the pericardium, evacuated about one litre of a thin purulent fluid. Although the heart was exposed by the incision, no disturbance of its function was observed, even after the pericardial sac had been thoroughly irrigated with a disinfectant fluid. The patient died twelve days after operation of cardiac failure. The autopsy demonstrated a number of pus channels in the left ventricle, some of which communicated with the pericardium, the posterior papillary muscles had been destroyed and the anterior was infiltrated with pus. It is probably that in this case abscesses first formed in the heart muscle, which ruptured into the pericardial sac and produced a pericarditis.—*Wien. Medizin. Presse.*, No. 5, 1892.

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### HERNIA, OPERABLE AND INOPERABLE.

Thos. H. Manley, in a paper on this subject, submitted at the late meeting of the American Medical Association, concluded as follows: Although, during the past fifteen or twenty years, very much has been written on hernial operations; much in America, but more in Europe, so far as can be learned from current literature, no one has yet made an attempt in a methodical manner, in any brochure of or treatise published, to systematically describe and classify those herniæ which are operable and those which are not. For the purpose, of at least in part, filling in this void, this essay is offered.

In epitomizing the subject and considering the question of treatment of hernia, in a general way, it may be said with something approaching definite certainty:

1. That, inasmuch as no operative technique yet devised, or even can be, will always effectually remove the causes of any species of hernia; in consequence of this a permanent, enduring cure is quite out of the question, in certain cases.

2. The radical cure of hernia may be regarded as one of the most satisfactory operations in general surgery. The fact that the disease often relapses constitutes no valid objection against surgical intervention; for this is commonly the case in the major part of operations performed on the human body.

3. A radical operation for a non-strangulated hernia, which gives no serious inconvenience, is not a justifiable procedure and should not be encouraged, unless there are pressing reasons for it, as the presence of a neoplastic formation in the sac; or this latter is occupied by an ovary, or some other viscus.

4. Hernial operations should not be performed in extremes of age. In early life there is seldom pressing necessity for them. In very advanced age the risk, immediate or remote to life or death, involved by operation more than compensates for the prospective benefit.

5. Unless there are specially contra-indicating factors in given cases, inguinal hernia should always be treated by radical operation in women, which, with them is so often attended by a permanent cure.

6. As a rule, all operations on reducible or incarcerated herniæ are radically curative, though the disease commonly relapses; nevertheless, the immediate dangers of strangulation have been removed and the hernia has been placed in position to be more comfortably borne by a truss.

7. Every operation for strangulated vaginal or femoral hernia should always include such additional steps, as will effect thereafter an obliteration of the canal without undue pressure on the tubular structures passing through it.

8. Very large, old herniæ, in any of the abdominal regions are not operable, except in the event of strangulation, as their sudden return, is often attended with mortal consequences.

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### HYPERÆSTHESIA OF THE CRANIAL BONES.

Benedikt (*Intern. klin. Rundschu*, No. 1, 1892) remarks on the importance of examining the cranial bones for undue sensitiveness, as a proceeding analogous to testing for spinal tenderness. He describes a form of caphalalgia in which pain and tenderness are confined to the cranial sutures. He has found this "suture neuralgia" in persons subjected to prolonged worry and overwork, in some nervous disorders such as Basedow's disease, and in persons at the age when the sutures are ossifying. He cites the case of an overworked youth, aged 19, in whom convulsions suddenly developed and quickly ended in death. Hæmorrhagic pachymeningitis was diagnosed, but the chief necroscopic discovery was acute synostosis of the cranial sutures, proceeding from within outwards. In a man, aged 51, affected with atrophy and paralysis of the left half of the tongue, paresis of the right labial muscles, formication in the right arm, and occasional speech troubles, Benedikt discovered great hyperæsthesia of the left half of the base of the skull, including the accessible portion of the orbital roof, and the left half of hard palate. Taken with the other symptoms he was inclined to consider this hyperæsthesia as a pathognomonic indication of bulbar affection. Unilateral hypersensitiveness of the cranial base is often present, he finds, in old standing migraine.—*Brit. Med. Jour.*

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## OBSTETRICS

### THE CHOREA OF PREGNANCY.

In an article upon this subject (*International Medical Magazine*, July, 1892), Dr. Lloyd, of Philadelphia, gives the prognosis as follows: Very practical questions are involved in the prognosis both to the mother and the child. Some years ago an English obstetrician, Barnes, wrote a paper on all the cases of the chorea of pregnancy that he could find in medical literature. His statistics seem to prove that about seventeen out of fifty-six are fatal. I think that this is an over-estimate, for this reason: It has happened in the past that only the fatal or the severe cases have been reported. I have seen five cases of the chorea of pregnancy, none of which have been fatal. Milder cases are not apt to get into print. I think that, while the chorea of pregnancy is a grave disease, it is not as grave as Barnes's statistics seem to prove. Another question comes up—the prognosis in the case of the child. Statistics have also proved that some of these women go into premature labor, and that some of these children are still-born

or die shortly after birth, probably because of the premature labor or because of the mother's reduced condition. A very practical question which you will have to face is, whether or not you shall bring on premature labor or even abortion. Many of these cases of chorea in pregnancy certainly recover after labor, but a small proportion do not, and on that account it is difficult to advise when premature labor should be induced. When the woman's life and the babe's life are in jeopardy it is justifiable, even imperative, to act. I think that after seven months in some cases, the chances for the babe's life may be better if taken from the mother. Recollect, however, that women do not all recover after confinement, and that the child does not always live.

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### POST-PARTUM HÆMORRHAGE.

How to prevent this formidable complication of labor, and how to check it when once the flood-gates have burst open are problems of the greatest importance to every practitioner throughout the land. Although one reads a good deal of it in text-books on obstetrics, it is fortunately by no means common, at any rate in its severer forms. Many a practitioner with extensive experience of the lying-in room has never met with a fatal case, and the records of over 11,000 labors at one of the London hospitals show only one fatal instance of post-partum hæmorrhage. In cases of moderate severity almost any of the means usually resorted to will suffice to excite uterine contraction, and so put an end to a condition full of danger for the woman, and full of anxiety for the medical attendant. The question is really what can be done to goad into activity the typically inertia-stricken uterus. Shall we pack the uterine cavity full of gauze as a last resort, or shall we content ourselves with temporarily arresting the outpour by manual pressure? To pack the uterus tightly enough to exercise efficient pressure on its walls is a task which few would care to attempt, while the ever-present danger of introducing pathogenic organisms from without cannot be overlooked. We have a shrewd suspicion that the cases in which success has followed the more radical measures would have proved amenable to milder treatment if persevered in.—*Med. Press.*

### ACTION OF HYDRASTIS CANADENSIS ON THE UTERUS IN THE PUERPERAL STATE.

Bordé (*Rif. Med.*, February 25th, 1892) gives the results of his experience with hydrastis and its preparations. As regards hydrochlorate of hydrastine, he finds that (1) it has no action on the physiological loss of blood during and immediately after labor; (2) it has no influence on the involution of the uterus during the puerperium; (3) it has very little influence on the lochia, its action, if any, being to cause (*a*) greater persistence of the red lochia, (*b*) delay in the expulsion of clots, (*c*) greater fætor of the lochia; (4) it does not assist the expulsion of clots and other bodies contained in the uterus. As regards the extract of hydrastine, he concludes from observations on twenty-five normal labors in which the drug was given in large doses during and for ten days after delivery that, if this drug has any action at all on the uterus in the puerperal state, it is to diminish the activity of its reaction and contraction, and therefore to increase both the loss of blood and the subsequent troubles. Finally, he gives it as his experience with the drug, in a few cases of non-puerperal uterine hæmorrhage, that it always failed.—*Brit. Med. Jour.*

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## GYNECOLOGY.

### EXPERIENCES IN THE OPERATIVE TREATMENT OF RUPTURED TUBAL GESTATION.

A. Gusserow (*Berlin. klin. Wochensch.*, No. 22) relates briefly twenty cases which have come under his care, and enunciated his views regarding the course of tubal pregnancies, as follows:

(I.) Rupture of the tubal sac which may be either a sudden bursting of the tube or it may follow the formation of a small opening in the wall through the destruction of the tissues by the growth of the chorionic villi. This form of rupture may lead to the following condition:—

(1.) Free hæmorrhage into the abdominal cavity always attended with a fatal result if not relieved by operation.

(2.) To slight free hæmorrhage which it is conjectured occurs in drops, becomes encapsulated and leads to secondary hæmatocele.

(3.) The hæmorrhage may occur be-

tween the folds of one of the broad ligaments, and lead to hæmatoma of the ligamentum lata.

(4.) The hæmorrhage may occur into the lower part of the peritoneal cavity, after this has been shut off by previous adhesions from the rest of the abdominal cavity forming what is known as primary hæmatocele.

II. The ovum through contraction of the tube may be expelled through the abdominal opening and the conditions described under 1, 2, and 4 may obtain.

III. The ovum *in situ* may undergo death through hæmorrhage into the decidua and form what is known as a "flesh mole" which (1) may shrivel and remain as a small hard swelling behind the uterus, or (2) may lead to the conditions described under I. from fresh hæmorrhages into the tubal canal.

Thirteen of his cases belonged to group I. and all ended in recovery excepting one. The remaining seven cases were done for secondary hæmorrhage occurring in hæmatocele. Theoretically he is in favor of doing a laparotomy at once in every case of extra-uterine pregnancy when the diagnosis is certain but this *proviso* does not frequently obtain, hence the majority of cases cannot be operated upon until after rupture.

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### DEATH FROM RETROFLEXED AND INCARCERATED UTERUS.

Treub (*Nederl. tijdschr. v. Verlosk en Gynäkol.*, Jahrg. iii., No. 3) reports a fatal case of incarcerated, pregnant uterus. The post-mortem revealed gangrene of the colon, followed by acute peritonitis. He has collected fifty cases of death from this cause, and in none of them except his own, was gangrene of the intestine a cause; 13 perished of uræmia, 11 of rupture of the bladder, 6 of sepsis, 10 of peritonitis followed cystitis, 3 of pyæmia, 2 of rupture of the peritoneum, and 5 of accidents accompanying an effort to replace the uterus. Gangrene of the intestine is, therefore, an unusual cause of death in this condition.

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## PEDIATRICS.

### EXOPHTHALMOS IN AN INFANT.

Dr. Philipsen (*Annal d'Oculist*, December, 1891) saw an infant of ten days with a pronounced displacement of the right eye forward and downward. It had been noticed two days after birth. A smooth, rounded tumor could be made out within the orbit, fluctuating, and painless on pressure. Without treatment this disappeared gradually and the eye regained its natural place, and three months later showed no signs. The diagnosis was cephalæmatoma, developed either between the periosteum and the orbital vault and between the dura mater and the vault, and having penetrated into the orbit by a congenital communication.

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### DIPHTHERIA AND CROUP.

The science of bacteriology has already opened a floodway of light upon many obscure problems in the ætiology of disease; and evidence is not wanting as to the practical application of the information obtained from this source. While perhaps not yet absolutely proved, there is abundant testimony, clinical and otherwise, pointing to the identity of the two processes, diphtheria and croup. Partly in consequence of early teaching, partly because the evidence is not conclusive, there is still a minority that maintains the individuality of the two affections. One of the most conclusive clinical arguments of their identity is afforded by the fact that in some of the large Continental hospitals cases of croup and diphtheria are placed side by side in the same ward, and the cases of croup do not become infected; while it is not rare for diphtheria to develop in a family in which an apparent case of croup has been present.

The almost general acceptance of the dictum of identity is indicated by the tendency to treat cases of croup as though they were diphtheric, and the instructions of Boards of Health that cases of croup be reported. Fraenkel (*Deutsche medicin. Wochenschr.*, No. 24, 1892, p, 564) has added an opportune and valuable contribution to the controversy. The opportunity was afforded him of holding autopsies in four cases, all clinically typical instances of croup. In none were the subjective or objective evidences of pharyngeal involvement present. All presented hoarseness and marked difficulty in breathing. In two, tracheotomy was performed. The autopsies confirmed the freedom of the pharyngeal structures. In one case the membrane was situated below the glottis.

Examination of the membrane present in each case disclosed the presence of the bacillus of diphtheria described by Klebs and Loeffler, the identity of which was absolutely assured by its morphologic appearances, by its behavior in culture, and by its pathogenicity to animals. It is true that the number of cases reported is small, but the evidence adduced is positive and conclusive, and not to be controverted by any negative evidence.

Investigations by Middeldorpf and Goldman (*Deutsche medicin. Wochenschr.*, No. 24, p. 570) have disclosed the identity of the pathologic processes in croup and diphtheria. In both there occurs an intense inflammation of the mucous membrane, leading to destruction and desquamation of epithelium. Abundant exudation takes place, with subsequent coagulation and the formation of membrane.—*Medical News.*

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### THE ÆTIOLOGY OF APHTHOUS STOMATITIS.

Ollivier (*Revue Mensuelle des Maladies de l' Enfance*, 1892, No. 1, p. 11) adduces some new observations in support of the view that the milk of cows and goats suffering from aphthous fever is capable of producing an aphthous stomatitis in persons who drink it. He does not deny that aphthæ may result from a simple herpetic eruption or from a local irritation; but he insists that distinct manifestations follow the drinking of infected milk. This view was originally suggested in 1765, by Sagar, who observed an epidemic of the disease among the monks of a Franciscan convent, where the principal article of diet was milk derived from a herd of cows at the time affected with aphthous fever. The observations of other writers, which tend to further corroborate this view of thei-ætiology of the disease, are discussed in detail. Bacteriological studies by Fränkel have shown the presence of the staphylococcus pyogenes citreus of Passet and the staphylococcus of Rosenbach; but neither of these organisms has a specific importance. In man, and especially in the case of children, the disease is absolutely without danger. Demme has reported one fatal case, and Fränkel records three or four. Prophylactic measures are, therefore, important; and when several cases occur among a number of children fed upon milk from a common source of supply, the milk should be well boiled; or, better, perhaps, a new dairy should be sought.—*Amer. Jour. Med. Sci.*

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## HYGIENE.

### RELATIVE VALUE OF GERMICIDAL CHEMICALS.

As the germ-destroying agents given below are the results, recently obtained (*Am. Drug.*) by the Health Department of New York City, they may be relied upon as accurate and conclusive. They rank in effectiveness as follows:

Corrosive sublimate, 64 grains to the gal.

Carbolic acid, 5 per cent. solution.

Bromine, 1 pound to 200 gals.

Permanganate of potash, 7¾ ounces to 200 gals.

Chloride of lime, 4 ounces to the gal.

Sulphate of iron, 1½ pounds to the gal.

Sulphate of zinc, 4 ounces to the gal.

Common salt, 2 ounces to the gal.

Two semi-officinal deodorant solutions are also spoken of—*Liquor Zinci et Ferri* for domestic use where iron is unobjectionable, and *Liquor Zinci et Aluminii Compositus* for disinfecting clothing, etc.

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### ROAST AND BAKED MEATS.

A writer in the *Lancet* says that the adoption of the closed range has to a great extent caused the abandonment of the method of roasting our meats before an open fire, and substituted therefor the process of baking in a close chamber or oven. The latter no doubt is the more convenient and economical method, but it may be questioned whether it is as wholesome. In baking the meat is, as it were, cooked in its own juices; the vapors exhaled from the warm meat are confined in the close oven and do not escape into the atmosphere, adding no doubt to both the flavor and richness of the food. At the same time the joint surrounded by this dense vapor does not yield its juices so freely as when roasted. Moreover the gravy from baked meat when cut, always yields more grease than does that from roast meat.

It is this retention of the volatile aroma and unctuous juices that render baked meat so popular, and no doubt with persons of strong stomachs it is not harmful;

but when digestion is weak it is undoubtedly injurious, and, when continued, its use aggravates or causes indigestion, and in many instances very considerable benefit has resulted from the physician's advice to the patient to have his meat roasted instead of baked.

Our knowledge at present regarding the respective digestibility of different fats is very imperfect; still the general and popular opinion is that the more oily fats are less digestible and more "bilious" than the solid, and it is these fluid fats which form the grease of cooked meats.

The author states that he does not wish to raise a panic with regard to the useful oven, but merely suggests that baking may in some instances be the unsuspected cause of indigestion, in which case a return to the roasting jack and the open fire would prove to be a step in the direction of a rightful cure.

## MEDICAL CHEMISTRY.

### BENZOATE OF BISMUTH.

Bismuth benzoate is claimed by Vibart (*Sem. Med.*) to be preferable for various reasons to the salicylate, the main objection to the latter being its uncertain composition and frequent contamination with free salicycle acid, whereby it becomes caustic in contact with the lining of the stomach. Bismuth benzoate may be prepared in the following manner: Mix together 100 grams of bismuth nitrate, 20 grams of glycerin and 60 grams of distilled water. To this add a hot solution consisting of 76 grams of sodium benzoate and 200 grams of water. The bismuth benzoate is precipitated as a white, insoluble powder of slightly metallic taste. It is decomposed in the organism, benzoic acid being found in the urine.

### A SUBSTITUTE FOR GOULARD'S EXTRACT.

The action of magnesium acetate solution upon magnesium oxide in hydrating the latter and causing a considerable portion to dissolve, has been made use of in the manufacture of "*sinodor*" preparations as deodorizing agents. Magnesium acetate solutions also have the power of dissolving lead oxide, and this is the basis of a patent for the manufacture of "white lead." A solution containing 4 per cent. lead oxide is especially desired. It is made as follows: 187 gm. dilute acetic acid are diluted with water and saturated with magnesium carbonate free from chloride, and water added to make one kilo. After filtering this, the specific gravity should be about 1.0377, the solution containing 10 per cent. magnesium acetate; it is then heated in a water bath for one hour with 7 per cent. lead oxide, and by the addition of water the original weight (one kilo) restored; after standing 24 hours the specific gravity is again determined, a difference of 0.001 indicating 1 per cent. lead oxide; if the difference is greater than 0.004 the solution must be correspondingly diluted. From the finished preparation an efficient *lead water* can be made by the addition of 4 parts to 96 parts water.—Dr. Kubel, *Archiv. dér Pharm.*, 1892, 173,

## NEWS AND MISCELLANY.

### ADULTERATED IODOFORM GAUZE.

Surgeons who use this dressing will do well to have its efficacy tested. The "Pharmacie Centrale" of Paris, warns the profession against the use of a gauze which professes to contain 30 per cent. of iodoform, but really contains only 8 per cent., the difference in color being made up by a preparation of phenol.

### THE AMERICAN ELECTRO THERAPEUTIC ASSOCIATION.

A very full program is announced for the coming meeting of the American Electro-Therapeutic Association which is to be held in New York, at the Academy of Medicine, 17 West 43d Street, October 4th, 5th and 6th.

There will be two interesting discussions one upon "The Relative Fœticidal Value of the Different Currents and their Application to Ectopic Gestation," to be discussed by many prominent gynecologists and electricians, and another upon "Cataphoresis and its Practical Application as a Therapeutic Measure."

Papers are announced by Drs. Geo. J. Engleman, Wellington Adams, and Geo. F. Hulbert, of St. Louis; Wm. F. Hutchinson, of Providence, R. I., Franklin H. Martin, of Chicago, Ill., A. Lapthorn Smith, of Montreal, Canada, R. J. Nunn, of Savannah Ga., Thomas W. Poole, of

Lindsay, Ontario, C. Eugene Riggs, of St. Paul, W. J. Herdman, of Ann Arbor, Mich., D. S. Campbell, of Detroit, Mich., G. Betton Massey, of Philadelphia, Henry D. Fry, of Washington, D. C., H. E. Hayd, of Buffalo, N. Y., J. H. Kellog, of Battle Creek, Mich., C. G. Cannaday, of Roanoke, Va., Ernest Wende, of Buffalo, N. Y., and Wm. J. Morton, Augustin H. Goelet, A. D. Rockwell, Landon Carter Gray, Robert Newman, Ephraim Cutter, Frederick Peterson, G. M. Hammond, F. Van Raitz, of N. Y., and many others. Dr. J. Mount Bleyer, will give an instructive lecture with demonstrations entitled, "The Phonograph and Microphonograph, the Principles Underlying them and their Uses in the Sciences."

In connection with the meeting, there will be an exhibition of modern medical electrical apparatus, all the prominent manufacturers being represented.

The social part of the program includes many pleasant surprises.

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## SLEEPLESSNESS.

Whether, as appears likely, sleeplessness is more characteristic of our own days than those of our predecessors, or that, in accordance with a scientific fashion, it is now more noticed, we certainly hear of its prevalence with somewhat startling frequency. The nostrums proposed for the cure of this disorder are numerous. Many, if not most of them—we do not for the moment speak of narcotic drugs—are empirical, and are cast upon the public intelligence without any conscious reference to causes actually at work upon the brain and other nervous tissues. It does not necessarily follow that they are valueless, and we should no more think of repudiating their ordinarily legitimate exercise than of refusing the occasional aid of such medicinal agents as may be safely trusted to discharge the same needful function. It is to be understood, however, that we would, wherever possible, avoid, and replace by simpler non-medicinal methods, even such occasional useful aid. This attitude is but rational, if we consider that the true object of treatment is never by choice merely palliative, but curative, and for cure there is needed the detection and removal of an active cause. The revelation of the causes of insomnia is, indeed, no simple matter. Thus much, however, we may say—namely, that just as the state of the brain in normal sleep implies a quiescent cerebral circulation somewhat reduced in volume, so in those whose nights are habitually restless we shall commonly find a condition of cerebral vascular tension. This, let it be noted, is not incompatible with general anæmia or with defective brain nutrition. There is, indeed, nothing so conducive to local vascular congestion as the constant exercise of a weakened organ. Mental worry thus acts upon the jaded brain, and we need not wonder, therefore, that it "murders" sleep. The true means of relief is as clear as it is often impossible. In such cases, however, and still more in others where adequate, or even more than adequate, nutrition is maintained, we find a simple and ready antidote in physical exercise. Muscular activity, in fact may be employed to balance nervous irritation. In it we provide a means of counter exhaustion. There is a transference of vascular excitement, and of tension, with corresponding relief at the site first affected. Further, the same process implies a stimulation of the general metamorphic energy and the removal from the tissues of irritant excretable products. This brings us to another cause of insomnia, particularly of that which we sometimes observe in the gouty and rheumatic. It is probably on the ground of removal of such superfluous substances that we must explain the salutary action of the traditional "night cap" of hot water, or the boiled onion, a stimulant of the kidney, at supper. Where mental over-activity or irritation has to do with insomnia, the influence of change—that is, of a change in thought—should have a trial. It is no doubt a blind groping after this remedy that induces some to read themselves asleep. Better in several ways is the practice introdnced by the German Kant, who spent some time before he retired for the night in cutting off by an effort of thought each mental occupation of the previous working hours. We might, however, multiply the stock of remedies without meeting all possible needs. The desirable course for any sleepless unfortunate to adopt is obviously not to resort to sedative drugs to allay his distress, but to seek the advice of his trusted medical attendant and its remedy in the discovery and the removal of its cause.—*Lancet.*